Ontario Universities:

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Access, Operations, and Funding

Ontario Economic Council

Conference Proceedings

ONTARIO UNIVERSITIES:
ACCESS, OPERATIONS, AND FUNDING

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Ontario Universities: Access, Operations, and Funding

Edited by David W. Conklin
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Preface

In January 1984, the Ontario Lieutenant Governor in Council formally established The Commission on the Future Development of the Universities of Ontario, frequently referred to as the Bovey Commission. The purpose of this commission was to undertake studies and to present recommendations on the policies and practices of universities and also those provincial and federal government bodies involved with their operation and funding. (The Commission's terms of reference are reproduced at the conclusion of this preface and analysed further throughout the volume.) Three Commissioners were appointed: Mr. Edmund C. Bovey, Dr. J. Fraser Mustard, and Dr. Ronald L. Watts. In June 1984, the Commission issued an interim report entitled *Ontario Universities 1984: Issues and Alternatives*. In this document, the Commissioners called for 'reactions, suggestions and briefs from all components within the universities, from other organizations and from the public at large, including business, industry, and labour'.

The Ontario Economic Council responded to this call by organizing a public conference at which research on matters concerning university access, operations, and funding could be presented and discussed. This volume contains the papers and much of the commentary of that conference. In many cases the authors have revised their papers so that some of the insights generated at the conference itself are incorporated into them. In addition to the three major sections on access, operations, and funding, this volume also contains an introductory keynote address, a concluding overview panel, the remarks of a rapporteur, and an appendix.

It is important to note that university access, operations, and funding are intimately related. Although the separation of these subjects is useful here for analytical purposes, it is necessary for public-policy purposes that one perceives the many interrelationships between them.

Several aspects of the Council's conference volume deserve special mention. First, as the conference participants included representatives from a variety of backgrounds, this volume contains a wide range of perspectives and recommendations. Consequently, the reader is not presented with a uniform set of clear and simple answers. Rather, this volume contains much of the information a reader would require for developing his or her own reasoned judgement. Second, the issues that are analysed here will not disappear quickly. We expect that the material in this volume will be relevant for many years to come. Further, although authors developed their papers in response to the recent publicly-stated request of the Commission, their views are the result of many years of study of this subject matter. Hence this volume is not solely a response to the specific issues raised by the Bovey Commission. Finally, the papers were written prior to the release of the final report of the Bovey Commission. References by authors are thus to the Bovey interim report and to formal submissions made to the Commission in response to the interim report.

The Ontario Economic Council would like to express publicly its appreciation to the individuals who participated in the conference and in the preparation of this volume. The Council staff deserves special thanks: Administrative Officer Sharon Wahl; Publications Officer Brenda Huff; Word Processing Technicians Tom Gerylo, James Leahy, and Sylvia Machek; Publications Assistant Kathy Ashenden; Librarian Diane Wenzel; Assistant Librarian Denise Guillbeault-Chong; and Research Officers Alex Athanassakos, Douglas Crocker, Kevin Dowd, and Jacob Levenstein. Special thanks are due to Sheila Richardson for her work as style editor.

Terms of Reference of the Bovey Commission

> To present to the Government a plan of action to better enable the universities of Ontario to adjust to changing social and economic conditions. The Commission should proceed on the basis that annual increases to the real public resources provided to the universities will reflect the desire to protect the integrity of the universities, to strengthen their ability to contribute to the intellectual, economic, social and cultural foundations of society, as well as to reflect the Government's policy of fiscal restraint and prudent management of public funds.
>
> Without restricting the scope of the activities of the Commission, its review should include the following:
>
> 1 To develop an operational plan which, without reducing the number of universities in Ontario, provides for more clearly defined, different and distinctive roles for the universities of Ontario in order to maintain and enhance the quality of university education by ensuring the appropriate concentration of academic strengths in areas of intellectual and social importance, including:

- consideration of the designation of specific universities as centres of specialization with a view to preserving and developing further a calibre of teaching and research of national and international excellence;
- consideration of the technological advances in the delivery of university education to geographically remote areas as well as the cost effectiveness that such technology may bring.

2 To address the issue of accessibility to university level education in the context of economic realities and in the context of a differentiated university structure including:

- consideration of the importance of new patterns of credit study which embrace the concept of life long learning, including part-time and recurrent education;
- consideration of the need for, and form of, general and specific entrance examinations to the Ontario University system;
- consideration of the need for a process whereby adjustments can be regularly made to the resources allocated to professional programs such as education, law, medicine, dentistry, etc., and to the level of enrolment in these programs to respond to changing labour market requirements.

3 To address the method of distribution of university operating grants with a view to ensuring an adequate and measurable basis for public accountability while enabling the universities to remain autonomous in the governance of their affairs and ensuring that their responsibilities as institutions of higher education are discharged with integrity. The method of distribution should be sufficiently flexible to permit adjustments from time to time in response to the ongoing evolution of the new university structure and include consideration of:

- appropriate ways to encourage faculty renewal and replacement;
- funds necessary to facilitate faculty renewal and adjustments arising from the Commission's recommendations;
- the appropriateness of program weights as one of the determining factors for funding distribution requirements;
- the possible separation of research weights as one of the determining factors for funding distribution requirements;
- the possible separation of research funding from instructional funding to ensure a harmonious blending of

provincial and national objectives in research carried out in universities;
- the distribution of provincial capital support and the role of private sector support in the maintenance and enhancement of the physical structures of the system;
- appropriate tuition fee policies that reflect on the one hand accessibility policies recommended by the Commission and on the other equitable levels of student contribution with respect to the overall cost of the university system.

4 To consider the need for mechanisms for regulation, coordination and the provision of advice to the Government, and in particular to clarify the role of the Ontario Council on University Affairs in the context of a new and differentiated university structure.

5 To report its plan of action to the Minister of Colleges and Universities by November 15, 1984.

ADDENDUM

On April 19, 1984, the Minister of Education [Bette Stephenson] wrote to the Chairman of the [Bovey] Commission on the matter of the proposed new 'University of Northeastern Ontario.' The Minister noted that 'the government remains committed to the restructuring of the university system in Northeastern Ontario.' She added:

> I believe, however, that, given the broad mandate of the Commission on the Future Development of the Universities of Ontario, it would be precipitous of the government to initiate any significant restructuring of Ontario's university system while the Commission's deliberations are in progress. Accordingly, I would request that the Commission consider the matter of this reorganization in the context of its overall mandate to present to the government a plan of action to better enable the universities of Ontario to adjust to changing social and economic conditions.

The Commission's terms of reference have consequently been extended to include the Minister's referral of this question.

The Commission will consider the matter in the context of its general terms of reference. (From *Ontario Universities 1984: Issues and Alternatives.*)

PART I: KEYNOTE ADDRESS

Universities and society: mutual obligations

Robert O. Berdahl

SUBSTANCE AND PROCESS

I feel some discomfort with the charge given to me by the Ontario Economic Council. I was asked to address the topic 'The role of universities in our changing society: what ought to be the objectives of universities?' While I do have a set of personal values which could supply some answers to such a general question, I have no standing either as a philosopher or as a citizen of Ontario to deserve your attention on this subject. Thus my substantive response would not merit more than passing attention and I will give it briefly only to allow you to judge the possibly unconscious bias in my main remarks which fall in the area of process. If I have any justification for taking your time, it is because I, as a political scientist, have long been a student of relations between universities and government, and I suggest that the quality of the answers to the OEC question at any given time may be strongly influenced by the nature of the process by which the answers are reached.

My brief answer to the basic charge is that I accept a possible marginal decrease in *average* quality in postsecondary education in the United States as the price that may have to have been paid for broadened access and greater social justice. But this assessment of average performance does not preclude high achievements in parts of the enterprise and there is even evidence that some elements of the best have become better. Certainly the pressures on Academe – positively for service and negatively for accountability – are increasing as a

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result of a bigger, more responsive system, and I can understand those who fear that the universities may have 'gained the world and lost their souls'. For example, I am aware of the recent strong criticisms along these lines from three Canadian historians, Messrs. Bercuson, Bothwell, and Granatstein, who wrote *The Great Brain Robbery* (1984).

My contention tonight, however, is not that I am right and these recent Canadian critics are wrong, but rather that it would serve all our purposes somewhat to stand back from the debate over substantive goals to examine as dispassionately as possible the *process* dimensions. For, if higher education is its normal self, the present conflicts will surely be followed by others, and our ability to resolve such future issues may be heavily influenced by how we choose to handle current ones.

Some of my process arguments will please the university world and some will seem more acceptable to those in the provincial government. But it is not my objective to 'split the difference.' It is because I truly believe what I earlier wrote that

> a major source of current friction is that many academics are trying to protect too much, and many persons in state government are trying to claim too much. A fundamental cause of this confusion is the failure of persons on both sides to recognize that academic freedom and university autonomy, though related, are not synonymous and that university-state relations in the one area may quite properly differ from those in the other (1971, p. 5).

Thus, I will suggest not only that universities are distinctive social institutions which deserve special treatment regarding their academic freedom and autonomy, but also that the state has a very legitimate and central partnership role with them which should be expressed through a suitably sensitive mechanism. The rest of the paper will consider these points.

UNIVERSITIES AS DISTINCTIVE SOCIAL INSTITUTIONS

Universities have generally had ambivalent relations with their surrounding societies: both involved and withdrawn; both serving and criticizing; both needing and being needed. Eric Ashby has identified the central dilemma of this ambivalence: a university 'must be sufficiently stable to sustain the ideal which gave it birth and sufficiently responsive to remain relevant to the society which supports it' (1966, p. 3).

The medieval universities in Europe developed as supra-national institutions under the jurisdiction of a distant Pope and operating in a 'uniform cultural milieu' which allowed them to combine practical learning for one of the 'higher' vocations or professions with a search for universal truths. Later, when nation-states replaced the Catholic Church as a dominant authorities over universities, the latter were often able to retain significant degrees of autonomy as they struggled to render proper accountability to the state. Clark Kerr has pointed out how remarkably stable many of these medieval universities have proved to be:

> About eighty-five institutions in the Western world established by 1520 still exist in recognizable forms, with similar functions and with unbroken histories, including the Catholic Church, the Parliaments of the Isle of Man, of Iceland and of Great Britain, several Swiss Cantons and seventy universities (1982, p. 152).

Of course, it was easier for a nation to grant its universities considerable autonomy when only a minute proportion of its youth was attending, when these students were not going much beyond the trivium grammar, rhetoric, and logic and the quadrivium arithmetic, geometry, astronomy, and music in their curriculum, and when few, if any, state funds were involved. In the nineteenth century, however, three developments were to occur which would lead to sharply increased tension between autonomy and accountability in the present. First, from German universities spread the greater importance of science and research as basic components of higher education, and governments began to see the direct links between universities, economic growth, and military strength. Second, the Morrill Land Grant Act of 1862 in the United States broadened the curriculum to include the agricultural and mechanical arts, led to a diversification of higher-education institutions, a larger student body, higher state costs, and ultimately brought forth the notion of university public service. This US pattern, like the German, ultimately spread to some other countries. Finally, increasing sophistication in the art of statecraft led to widespread tightening of public accountability practices, particularly those related to the expenditure of tax dollars.

Martin Trow in a stimulating essay (1974) has shown how the nature of the autonomy accountability issue has changed as higher education moved from what he termed an 'elite' to a 'mass' system (that is, growing from educating under 15 per cent of the collage-age cohort to a figure somewhere between that and 50 per cent). Trow also carried his analysis a step further by examining the probable consequences of another transition to what he terms 'universal access', so far experienced only in the United States, where some state jurisdictions now send over 50 per cent of their high-school graduates on to college.

A MATTER OF DEFINITIONS

In discussing the increasingly complex relations between universities and governments, one must distinguish among the several related terms already mentioned. A pause for definitions is therefore in order as words and phrases sometimes mean different things to different people based on the frame of reference which each brings to the issue.

In the case of this paper, the terms 'autonomy' and 'accountability' at first glance do not seem to present semantic problems. Taken simply, autonomy means the power to govern without outside controls and accountability means the requirement to demonstrate responsible actions. In theory, the argument has been made that there is no incompatibility between being both autonomous and accountable; in practice, one senses that usually where more accountability is required, less autonomy remains. The ideal to be sought seems clearly a balance of both conditions. Too much autonomy might lead to universities unresponsive to society; too much accountability might destroy the necessary academic ethos.

The problem, however, is even more complicated than that. Upon closer examination, one needs to make more subtle distinctions under each major heading. For example, given academic complaints about external 'intrusions', one would like to know whether the action in question was an academic-freedom issue or one pertaining to substantive or procedural autonomy. For it is argued here, again following Ashby (1966), that academic freedom and institutional autonomy are not the same thing, and that the Academy's reactions should reflect these distinctions.

Academic freedom is that freedom of the individual scholar in his/her teaching and research to pursue truth wherever it seems to lead without fear of punishment or termination of employment for having offended some political, religious, or social orthodoxy.

Substantive autonomy is the power of the university or college in its corporate form to determine its own goals and programs – if you will, the *what* of Academe.

Procedural autonomy is the power of the university or college in its corporate form to determine the means by which its goals and programs will be pursued – the *how* of Academe.

These three terms are obviously interrelated. For example, a college enjoying greater autonomy would seem more able to protect the academic freedom of its faculty (although autonomous Oxford and Cambridge in the early nineteenth century themselves denied academic freedom to their faculty); or along another dimension, a government could impose such a heavy set of procedural controls that they would have a serious impact on a college's ability to achieve its self-chosen substantive goals. Notwithstanding such blurring of categories in real life, it is argued here that it will be helpful in analysing the relations between higher education and government to keep these three terms conceptually distinct.

Ashby sees academic freedom as an 'internationally recognized and unambiguous privilege of university teachers' which must be protected whenever and however challenged. In contrast, 'the question as to what constitutes autonomy in universities is anything but unambiguous, and the patterns of autonomy which satisfy academics in different countries are very diverse' (1966, p. 293). Therefore, I would add, in exploring autonomy issues it is helpful to know whether the government is intervening in *procedural* or *substantive* matters. The former (e.g., pre-audits, controls over purchasing, personnel, some aspects of capital construction) can be an enormous bother to Academe, and sometimes even counterproductive to efficiency, but still usually do not prevent universities or colleges from ultimately achieving their goals. In contrast, governmental actions that affect substantive goals affect the heart of Academe. What is needed in this sensitive area, then, is negotiation of the respective roles of government and universities leading to some form of partnership and a division of powers concerning who will make which kinds of decisions relating to the substance of Academe. Ashby makes the broader point that the real safeguard for autonomy lies in careful definition of 'the essential ingredients' and 'ensuring that these are widely understood among the public, politicians, and civil servants'. He offers the following as a suggested list of these essential ingredients:

> 1 Freedom to select staff and students and to determine the conditions under which they remain in the university.
> 2 Freedom to determine curriculum content and degree standards.
> 3 Freedom to allocate funds (within the amounts available) across different categories of expenditures (1966, p. 296).

The definition of accountability offered above must also be examined in more detail. To speak of demonstrating 'responsible actions' merely begs the question of what constitutes such actions. There are at least three different ways in which one could approach the matter. Actions can be examined for their legality, for their efficiency, and/or for their effectiveness, with varying consequences for each aspect. Traditionally, so-called post-audits have been preoccupied with legality and efficiency, and through such concerns have brought considerable pressures on universities and colleges to tighten up their *procedures* for conducting business. There has arisen in the United States over the past fifteen years a performance-audit aspect of the accountability movement which focuses on effectiveness of institutional efforts. Although as yet only lightly used on higher-education subjects, this development could, if extended more deeply into Academe, greatly affect its substantive dimensions.

What can we say by way of a summary statement of this first set of categories? First, governments in general and that of Ontario in particular ought to stay out of any issues which threaten to lessen the vital academic freedom of universities. Second, governmental procedural controls are probably counter-productive and certainly irritating, but do not justify the same shrill note of academic outrage which might be voiced at threats to academic freedom. Finally, in the crucial domain of substantive autonomy, the state and the universities must somehow form a constructive partnership in which, while *force majeure* obviously lies with the state, there are sensitive mechanisms for bringing together state concerns with accountability and academic concerns with autonomy. The appointment of ad hoc blue-ribbon commissions similar to the Bovey Commission may be a necessary step in a given short-run crisis, but it is certainly no answer to the ongoing resolution of these two legitimate and contending perspectives. The very fact that the Ontario minister of education felt a need to appoint this commission is an indication that the preceding mechanisms had been considered inadequate in dealing with the major problems on the agenda.

CO-OPERATION, CO-ORDINATION, CONSOLIDATION

What is needed, then, is some ongoing process by which these academic and governmental perspectives may be reconciled. One can envisage at least three major modes of such resolution: some form of bottom-up, voluntary co-operation; some variation of top-down, consolidated governance; or some immediate form of statutory co-ordination which goes beyond co-operation but stops short of consolidated governance.

Here comparative experience suggests (without proving) that voluntary co-operation normally is unable to take the tough decisions because it usually operates on a principle of near unanimity, and vigorous objection from a party feeling threatened is usually enough to freeze its forward progress.

The consortium movement in the US and the history of the Council of Ontario Universities (COU) both bear witness to the limits of inter-institutional co-operation. I have said elsewhere that I found the COU one of the most effective voluntary groups that I had observed, but when its own Committee on Long Range Planning, chaired by a man of great insight and integrity, Percy Smith, urged it to recognize that either the COU or the Ontario Council of University Affairs (OCUA) had to exercise more authority, this advice was ignored.

While one could readily build such formal authority by a political decision to merge all universities in the province into one consolidated University of Ontario, as a Spinks report (Ontario 1966) earlier proposed, again my modest knowledge of this province plus comparative perspectives lead me to suggest that this response would lead to too much accountability and too little autonomy. Those states in the US where such consolidation has occurred do exhibit stronger powers for top-down retrenchment, and often appeal to political figures who understandably yearn for more simplified patterns of accountability. But these states also often exhibit excessive centralization of powers and frequently a preoccupation with governance at the expense of careful planning and co-ordination.

By a process of deduction, you will have now anticipated that, in rejecting both voluntary co-operation and consolidated governance as effective means of resolving on an ongoing basis the legitimate perspectives of both Academe and government in the area of substantive autonomy, I am left with the advocacy of co-ordination as the most desirable means of accomplishing this vital process.

CO-ORDINATION: POLITICAL, BUREAUCRATIC, ACADEMIC, AND MARKET

I come now to my major argument: that a state which carefully honours academic freedom and scrupulously refrains from inappropriate procedural controls may nevertheless harm its system of higher education by intervening excessively in substantive matters or, paradoxically, by intervening too little. The structure, functions, membership, and staffing of OCUA thus becomes a crucial element. In discussing the role of OCUA as a potential 'suitably sensitive mechanism' in its responsibilities for co-ordination, I must heed Burton Clark's warning against treating the co-ordination process too narrowly as a bilateral government-institutional relationship. In an insightful article entitled 'The Many Pathways of Academic Coordination', he urges that, to the political and bureaucratic modes of co-ordination which we all recognize as traditional, we add co-ordination by the academic profession and by the market:

> All...systems involve all four of the major forms specified here and all four are apparently required for effectiveness. The special function of political coordination is to articulate a variety of public interests...as these are defined by prevailing groups within and outside of government. The special function of bureaucratic coordination is to compose a formal system out of fragmented parts and to provide fair administration. The function of academic oligarchy is to protect professional self-rule, to lodge the control of academic work, including its standards, in the hands of those permanently

> involved and most intimately connected with it. And the special function of the market is to enhance and protect freedom of choice, for personnel, clientele, and institutions, and thereby indirectly promote system flexibility and adaptability (1979, pp. 265-6).

Clark does not argue that each system has equal shares of the four different models of co-ordination, but rather that the proportions of each vary markedly from one system to another. For example, behind the formal facade of the British Secretary of State for Education and Science, the civil servants in that department, and the University Grants Committee (UGC), Clark points to the pervasive role of British academics in making the system function. Similarly, alongside the various state structures for co-ordinating and governing American higher education, Clark underlines the primary role played by market forces based on student choice and fortified by institutional, state, and national student financial-aid programs.

The oversimplified arguments connected with each of these modes of co-ordination run as follows:

- The political and bureaucratic modes of co-ordination tend to concentrate too heavily on accountability and to be insufficiently sensitive to the needs of Academe for flexibility and creativity.
- The collegial or academic mode of co-ordination may be too preoccupied with the protection of autonomy and not responsive enough to the public interest.
- Co-ordination by market forces is alleged to promote responsiveness to social demand while relieving public authority of the burden and the blame for deciding which programs and which institutions may survive during a period of retrenchment. However, both David Breneman (1981) and Gareth Williams (1983) as professional economists have critiqued the severe weaknesses of the market model as a sufficient answer to the problem of accountability. For example, Breneman has pointed to the bad fit between current conditions in higher education and those which would be necessary for a pure market relationship to exist:

> 1 The 'firms' in this industry are not seeking to maximize profits or to minimize costs for a given level of activity...

> 2 The educational services produced by colleges and universities are not priced to the student at marginal cost, average cost, or even full cost...
> 3 The information available to students about colleges can hardly be considered complete (or even adequate) in many cases...
> 4 Some firms in this industry (the state institutions) receive substantial public subsidies, whereas comparable firms (the independent institutions) do not...(1981, p. 25).

Thus, one is left with Clark's observation that most systems partake of all four elements in varying degrees of balance. The British UCG has been highly influenced by academic participation but in recent years has faced increasing political and bureaucratic intervention, and now seems in need of somewhat greater openness to market forces.

Many US state systems have historically been market driven but have also seen recent increases in political and bureaucratic intervention. To face the problem of quality controls during a period of retrenchment, one should perhaps hope in the American context for mechanisms to increase the academic components of co-ordination.

Ontario's system of co-ordination seems to have had more academic participation than most US state systems and more market components than the British UGC system. It may sound harsh to your ears to hear that what may now be needed here is a stronger co-ordination role on the part of the political and bureaucratic elements of the provincial government.

Let me clarify this probably controversial statement: as I see it, the government over the past decade has felt it necessary to impose relatively severe fiscal restraint on the university system, yet has refused to grant OCUA the executive authority which would be needed to implement that negative fiscal policy with minimum damage to quality standards in higher education. Instead, lacking such authority, OCUA has had to rely on the ability of the universities through the COU to achieve voluntarily 'system rationalization' by themselves. Inter-institutional co-operation at its best may be only partly effective during a time of growth, when there is something for everyone to share; to ask that of a university system on the way down, so to speak, is really a pious hope, and the results in Ontario bear witness to that fact.

Now there were two variables in the preceding scenario: one, the level of funding which the provincial government in its wisdom felt able to provide; and two, the powers which the provincial government was willing to delegate in order to implement the fiscal policy with minimum damage to quality in higher education. While one would hope to change the first policy in order to avoid the need for the second, we must confront the fact that in a democratic system, the government has 'the right to be wrong' and it may insist that the funding level will not be increased in the forseeable future. However, one can then fault that government for not seeing the inevitable threat to overall quality standards from a system which lacks the authority to undertake 'selective retrenchment'. One cannot pretend that all academic programs in all institutions are of equal value to the province and to the world. Therefore, if one is speaking of more than an occasional marginal cut imposed in a short-run fiscal crisis, there has to be some leverage point in the higher-education system which will have accurate and current knowledge about relative program quality and which has the power to use that knowledge to undertake both selective retrenchment and the promotion of innovations which are needed over an extended period to keep vitality in the enterprise. The British UGC has exercised that kind of authority during the 1981-84 budget cuts in Britain and, while numerous voices are critical about the particular techniques used to implement the policy, most thinking people that I know in Britain would justify the process of selective retrenchment as against the more politically palatable one of 'even cuts for all'. A 'garrison state' mentality of circling all the wagons and slowly yielding equal bits and pieces from each participant is the surest formula I know for ultimate mediocrity. Society has a right to expect finer things from higher education.

Managing selective retrenchment in Ontario

Coming back to Ontario, then, what are the kinds of issues which an agency confronted with a need for selective retrenchment would have to face? Here I turn to a list of issues suggested by the Ontario Economic Council (OEC) in a briefing paper sent to me prior to this conference:

1 responsiveness to market forces versus the pursuit of truth and basic research.

2 the purpose of a university education today: the relationships between universities and their curricula and jobs; the preparation of students for their future employment.
3 the relationships between universities and economic growth and development: the propagation of scientific advances and business skills.
4 the role of undergraduate teaching versus the role of graduate teaching versus the role of research; what are the optimal linkages between these functions? what is the optimal balance?
5 the relationships between universities and other postsecondary educational experiences – in particular, on-the-job training and community and technical colleges; the division or separation of responsibilities; and the provisions for the transfer of students among these different structures (e.g., transferability of credits).

Then, in listing a sixth issue, the OEC put its finger on the single most crucial variable:

6 (modified by me to include nonuniversity institutions) the degree to which different universities and other institutions may answer these questions differently: the scope for diversity within a system of postsecondary education.

This notion of different missions not only between the university and non-university sectors but *within* each is, to me, the key concept. Ontario needs one or two world-class universities that will pursue basic research at an intensive level, with all the high-cost consequences that this entails. The province also needs a widespread set of colleges of applied arts and technology (CAATs) that are relatively open-access with, ideally, some means available for a late blooming, high flying student to transfer to a B.A. or B.S. degree program.

In between these poles, the province also needs a whole spectrum of institutions, some of which emphasize more undergraduate teaching in the liberal arts, some undergraduate preparation for manpower needs, and perhaps some which combine both functions. There is probably also a provincial need for several institutions which go into modest graduate work and stress applied research and public service.

The point is that in a system of limited resources where quality is still a key concern, institutions should accept the inevitability of the dictum that they cannot try to be all things to all people.

The Bovey Commission is, of course, aware of this basic fact, as is shown by the table of contents in its *Issues and Alternatives* document (1984). I must add, parenthetically, that I was very impressed with the members and staff of the Bovey Commission when I spoke with them in Toronto last March. These are clearly people with great sensitivity to the complexities involved and great sincerity in trying to help the system to make the painful adjustments necessary. But the point which I hope to make tonight is that a one-shot commission is no substitute for an effective ongoing agency.

This is, after all, not a new recommendation. The Bladen Commission (Bladen, Dugal, McCutcheon, 1965) urged each provincial system to develop such an agency, and later, the Commission on Post-secondary Education in Ontario (1972) strongly recommended a co-ordinating board with executive authority. The universities, the Council on Universities, the Ontario Council of University Faculty Associations (OCUFA) and the Ontario Federation of Students (OFS) all supported that recommendation. For some reason the provincial government has been reluctant to delegate the executive authority to its co-ordinating board – perhaps feeling that it wanted to honour university autonomy by avoiding such authority. As I've tried to show tonight, that self-denying ordinance plus severe underfunding has combined to create a potentially disastrous policy for postsecondary education.

The range of issues and the alternative policy choices for each issue are well-delineated in the Bovey Commission's June 1984 Report. Its recommendations, if accepted and funded by the government, should shift the Ontario system onto a new plateau of operation. But my plea tonight is for both the provincial government and the universities to understand and accept the need for an ongoing co-ordinating board with executive authority to monitor, evaluate, refine, and adapt the system over time. To do its job effectively, such a board will need to incorporate as many as possible of the following practices or elements:

- have a membership drawn from both academic and lay figures, with staggered terms for continuity and removal from immediate partisan majorities.
- have the power to select its own chairperson and executive director,the former normally lay and the latter normally from Academe. The executive director's salary and working conditions

must be sufficient to attract and retain outstanding talent. (Would this mean something roughly equal to the President of the University of Toronto?)
– have the power to recruit a high-quality staff independent of provincial civil-service regulations, and sufficient in size to undertake extensive in-house research on higher education.
– create an extensive advisory-committee structure, drawing heavily from relevant expertise in the universities. The COU would obviously be included in the process.
– be ready to collaborate closely with non-university sector planning and to develop information systems which could supply relevant data about both sectors.
– undertake a broad participatory planning process which would produce a diverse system of institutions, each with a careful role and mission statement well anchored-down but also subject to periodic re-examination.
– develop a budgeting system which would recognize the differential costs of the diversified system, would not be totally enrolment-driven, and which would provide incentives both for savings and inter-institutional co-operation.
– develop, in conjunction with the COU and the individual institutions, a rigorous system of program evaluation which would aid the board both in monitoring institutional conformity to role and mission and in having an accurate knowledge base if selective retrenchment continues to be necessary.
– develop a set of policies on access and manpower needs which would integrate such features as admission standards, tuition levels, and provincial student-aid programs so that social, regional, and economic considerations would receive due attention.
– develop a system of periodic evaluation for the individual institutions, for the system as a collectivity, and for the board's effectiveness in particular. This is asking a great deal, but I believe strongly that if Academe asks society for special privileges of self-government, then rigorous self-assessment would be the other part of that package.

With the above elements and practices mostly in place, you would then have a system incorporating a healthy balance of Clark's four modes of co-ordination:

1 macro-political policy guidance from the government which goes beyond mere fiscal decisions to include willingness to delegate authority to a co-ordinating board;

2 academic judgments of academic members of the co-ordinating board, of advisory committees drawn from the universities, and of the continuing strong academic role of the COU;
3 careful analyses of accurate information undertaken by a strong co-ordinating board staff; and
4 plans emerging out of this multi-dimensional process to create a diverse provincial system of postsecondary education with some flexibility to changing market demands.

TO CONCORDAT OR NOT TO CONCORDAT

Citizens of this province may feel that they will have their hands full just reaching most of the goals outlined above. The Bovey Commission's recommendations, the government's responses, and the possible creation of a stronger co-ordinating board will occupy much time and attention over the near future.

Yet Eric Ashby has suggested (admittedly for an African audience) that it might be wise to anticipate increasing friction between universities and government by negotiating carefully, at a time when no crisis would poison the atmosphere, a 'concordat' of rights and responsibilities for both government and the universities (1966, p. 343).

Among Canadians, Claude Bissell (1968), Alex Corry (1969), Kenneth Hare (1968), and the Hurtubise Rowat report (1970) have all recommended in one form or another the creation of agreements about the proper spheres of action of each side in this complex relationship.

However, the late Stephen Bailey, when Vice President of the American Council on Education, argued eloquently about the dangers of such an approach:

> at heart we are dealing with a dilemma we cannot rationally wish to resolve. The public interest would not...be served if the academy were to enjoy an untroubled immunity. Nor could the public interest be served by the academy's being subjected to an intimate surveillance. Whatever our current discomforts because of a sense that the state is crowding us a bit, the underlying tension is benign. (p. 1)

Bailey then dissented from the concordat approach, saying that 'the precise border between the state and the academy is, and must be kept, fuzzy. For if a precise delineation is sought, ...the state has more than the academy of what it takes to draw the line' (1975).

The Carnegie Commission on Higher Education (1973), however, under the leadership of Clark Kerr, reasoned that although campuses had 'largely occupied', 'by default', the 'substantial sphere of ambiguity in the past,' governmental authority was now expanding and moving into those areas. 'The ambiguities that once were an asset are now a liability. Greater precision of understanding is now highly desirable' (1973).

The Carnegie Commission then offered, by way of illustration, its own generalized pattern for the distribution of authority between 'public control' and 'institutional independence.' I attach it here as Table 1.

You in Ontario might well want to arrive at a different balance of powers, but the exercise may be healthy in itself.

CONCLUSION

In conclusion, let me restate that my purpose was not to engage the authors of *The Great Brain Robbery* in an extended debate about what the objectives of universities ought to be. Rather I have tried to direct attention to the importance of process, to a clarification of basic terms, and to what I see as the inevitable need for the province finally to give its co-ordinating board the authority necessary to do its difficult job.

Ideally, the provincial economy would grow much stronger and/or the priorities of the provincial government would put more funds into higher education. Barring such developments, I see no way to maintain quality during chronic under-funding except through an agency with the power and the courage to undertake selective retrenchment.

May you find the dollars to avoid the painful necessity! But if the dollars are not there, may you find the power and the courage to show that the Academy can work in partnership with the government to protect its integrity.

TABLE 1
Proposed Carnegie pattern for distribution of authority

	Public control	Institutional independence
Governance	Basic responsibility for law enforcement.	Right to refuse oaths not required for all citizens in similar circumstances.
	Right to insist on political neutrality of institutions of higher education.	
	Duty to appoint trustees of public institutions of higher education (or to select them through popular election).	Right to independent trustees; no ex officio trustees with subsequent budget authority.
	Right to reports and accountability on matters of public interest.	Right to nonpartisan trustees as recommended by some impartial screening agency or as confirmed by some branch of the state legislature, or both; or as elected by the public.
	Duty of courts to hear cases alleging denial of general rights of a citizen and of unfair procedures.	
Financial and business affairs	Appropriations of public funds on basis of general formulas that reflect quantity and quality of output.	Assignment of all funds to specific purposes.
	Postaudit, rather than preaudit, of expenditures, of purchases, of personnel actions.	Freedom to make expenditures within budget, to make purchases, and to take personnel action subject only to postaudit.
	Examination of effective use of resources on a postaudit basis.	Determination of individual work loads and of specific assignments of faculty and staff members.
	Standards for accounting practices and postaudit of them.	

TABLE 1 continued

	Public control	Institutional independence
	General level of salaries.	Determination of specific salaries.
	Appropriation of public funds for building on basis of general formulas for building requirements.	Design of buildings and assignment of space.
Academic and intellectual affairs	General policies on student admissions: number of places.	Selection of individual students.
	Equality of access. Academic level of general ability among types of institutions. General distribution of students by level of division.	
	Policies for equal access to employment for women and for members of minority groups.	Academic policies for, and actual selection and promotion of, faculty members.
	Policies on differentiation of functions among systems of higher education and on specialization by major fields of endeavour among institutions.	Approval of individual courses and course content.
	No right to expect secret research or service from members of institutions of higher education; and no right to prior review before publication of research results; but right to patents where appropriate.	Policies on and administration of research and service activities.
		Determination of grades and issuance of individual degrees.

	Selection of academic and administrative leadership.
Enforcement of the national Bill of Rights.	Policies on academic freedom.
Policies on size and rate of growth of campuses.	Policies on size and rate of growth of departments, schools, and colleges within budgetary limitations.
Establishment of new campuses and other major new endeavours, such as a medical school, and definition of scope.	Academic programs for new campuses and other major new endeavours with general authorization.
Encouragement of innovation through inquiry, recommendation, allocation of special funds, application of general budgetary formulas, starting new institutions.	Development of and detailed planning for innovation.

SOURCE: Carnegie Commission on Higher Education (1973).

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PART II: ACCESS

Access – by students to universities and by university graduates to jobs

Alexander W. Astin

INTRODUCTION

It has become almost a truism in discussions of educational policy these days to say that there is an inherent conflict between the goals of excellence and equity. In the context of this paper, 'equity' refers to access and has both qualitative and quantitative aspects: it occurs when higher-education opportunities of appropriate quality are available on an equal basis to all persons who seek them.

Over the years I have become convinced that this 'conflict' between excellence and equity results primarily from the way that we have traditionally tended to define excellence. This realization has led me to formulate an alternative view of excellence that not only is more compatible with the goal of equity but also seems to be more consistent with the purposes of higher education. Let us first review these traditional views of excellence and then show how the alternative view might provide a useful tool for discussing some of the larger policy issues that are the topic of this conference. In particular, this alternative conception of excellence seems to offer a way to model some of the problems that plague higher-education policy not only in Ontario, but also in the United States and, indeed, around much of the world.

TRADITIONAL CONCEPTIONS OF EXCELLENCE

In higher education we have traditionally relied upon two methods of defining quality or excellence. For simplicity I have labelled these as

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the 'reputational' approach and the 'resources' approach. The reputational approach derives from the fact that, in the education systems of most developed countries, institutions vary in their perceived degrees of excellence, which creates a kind of institutional hierarchy or pecking order. Institutions at the top of the hierarchy are perceived to be the most 'excellent'. Note that this hierarchy is really a kind of reputational folklore that we carry around in our heads. The United States, with its 3,000 postsecondary institutions, has what is perhaps the most finely graded hierarchy, with the elite research universities at the top. In most countries, students strive to be admitted to institutions at the top of the hierarchy, since they are believed to provide the most 'excellent' educational programs and later employment opportunities. Competition for such opportunities is perhaps most intense in Japan, although it probably exists to some extent in all countries.

In the United States, investigators have frequently attempted to codify this folklore by means of reputational surveys. Usually such surveys ask faculty or administrators to rate institutions in terms of their 'excellence' or 'quality'. Regardless of who is doing the rating and of what particular institutional quality is being rated, these reputational surveys produce a very similar list of the 'best' institutions. Indeed, an interesting exercise that I frequently use in my graduate seminars is to ask students to make a list of the 10 or 15 'best' or 'highest quality' institutions in the country. The resulting lists turn out to be remarkably similar. As you might guess, almost everyone's list includes Harvard, Yale, Berkeley, Stanford, and the like.

The reputational view of institutional excellence is frequently criticized on the grounds that it is too subjective. Educators and policymakers who want more objective indicators of institutional excellence are inclined to embrace the 'resources' conception. For instance, resource measures are the ones most favoured by institutional accrediting agencies.

The four basic types of resources in higher education are staff, physical facilities, students, and money. The first three types can, of course, be acquired with money, particularly physical facilities, which can be directly purchased. Thus, for simplicity, it is reasonable to consider three different types of resources. Faculty constitute the principal personnel resource, and the quality of faculty is assessed by measures such as the proportion with doctorates, publication rates or other indications of scholarly visibility, and the like. Student quality is typically assessed in terms of performance on standardized tests. Physical plants are assessed in terms of the number and quality of classrooms, library resources, laboratories, residential facilities, and so on. Fiscal resources are assessed by a variety of measures, including endowment, per-student expenditures, student-faculty ratios, average class size, and faculty salaries.

Many of these resource measures have become popular indicators of institutional 'excellence'. Research universities, for example, commonly gauge the quality of their faculty in terms of how many have been elected to membership in the National Academy of Sciences, or have won Guggenheim Fellowships, Nobel Prizes, and other awards given in recognition of outstanding scientific or scholarly contributions. Almost all baccalaureate-granting institutions are interested in raising their selectivity levels and in enrolling larger numbers of National Merit Scholars and other highly able students. And of course, all institutions continually seek additional financial resources. The *Chronicle of Higher Education* annually publishes detailed information on institutional endowments on a college-by-college basis.

U.S. higher-education institutions vary remarkably on almost all resource measures. For example, the proportion of faculty members with doctorates ranges from fewer than 40 per cent at some institutions to more than 90 per cent at others. Average faculty salaries range from about $15,000 to more than $40,000. At the most selective institutions, students in the *lowest* 5 per cent in academic ability have higher test scores than the *highest* 5 per cent of students in the least selective institutions (Astin 1971). A few institutions enrol several hundred National Merit Scholars; most institutions enrol none.

The variations in financial resources are just as remarkable. Perhaps the single best measure of an institution's financial resources is the amount of money it spends per student on its educational program. The institutions at the top selectivity level spend twice as much per student on student services as the institutions at the bottom level; three times as much on instruction, administration, and physical plant; and nearly four times as much on academic support. By far the largest discrepancy occurs for research funds: the most selective institutions outspend the least selective ones by better than fifty to one (Astin 1985).

As might be expected, resource measures are strongly correlated with reputational ratings. Thus, per-student educational expenditures correlate .65 with the overall rating of graduate programs and .62 with undergraduate quality rankings. Resource measures are also strongly correlated with each other: selectivity correlates .65 with per-student educational expenditures, .64 with per-student endowment, and .55 with research expenditures. The correlations among resource measures are even greater when computed separately for different types of institutions (research universities, liberal-arts colleges, and so forth [Astin and Henson 1977]).

As these strong intercorrelations suggest, the reputational and resources conceptions of excellence tend to be mutually reinforcing. That is, if the reputational folklore views a particular institution as being 'excellent', this view gets reinforced by the fact that the institution also has highly able students, highly paid and prestigious faculty, large endowments, and other financial resources.

The process of selective admissions represents another way in which resources enhance reputation, and vice versa. Institutions that occupy high positions in the hierarchy naturally attract relatively large numbers of student applicants. Through selective admissions, whereby only those applicants with high test scores and outstanding high-school records are admitted, the institution comes to be regarded as a kind of exclusive club, and membership becomes a badge of honour. This process feeds on itself: as the institution's admissions policies become more selective, its reputation is enhanced, and ever larger numbers of students seek admission to the club. In the minds of many educators and lay persons, selective admissions policies themselves are directly associated with 'excellence'. An 'excellent' institution, according to this view, is one that 'maintains high standards'. To many persons, maintaining high standards means maintaining highly selective admissions policies. Indeed, about the only substantive recommendation concerning higher education made by the National Commission on Excellence in Education in its final report, *A Nation at Risk*, is that colleges and universities raise their 'admissions standards'.

The close connection between selective admissions policies and 'excellence' as revealed in an institution's reputation or resources helps to explain some of the terminology usually heard in discussions of excellence. College faculty and administrators are fond of phrases like 'academic excellence' and 'academic standards'. Just as stringent admissions standards are regarded as necessary to 'maintaining academic standards', so open admissions policies are seen as 'a threat to academic excellence'. The resources view of excellence is fundamental to such beliefs, whereby the excellence or quality of the institution is identified with the excellence or quality of the *people* it admits.

Are traditional definitions consistent with educational purposes?

How well do these traditional conceptions of excellence reflect an institution's fundamental educational purpose? Can we assume that an institution which is 'excellent' in reputational or resource terms is also 'excellent' in its capacity to develop student talent (i.e., human capital)? The reputational view presents the biggest stumbling block here: just because people *believe* that an institution is excellent, it does not necessarily follow that the institution is any more effective in developing its students' talent than a less respectable institution. A more plausible case can be made for the resources view. It is reasonable to assume that a student will be able to develop his or her talent more fully in an environment which has a lot of other bright students, excellent physical facilities, and a prestigious and highly paid faculty. Unfortunately, this assumption receives little support from the few studies that have been done to test the 'centre of excellence' concept. Institutions with highly able students, large libraries, highly paid faculty, and large per-student expenditures do not seem to foster any greater degree of intellectual development than institutions without such resources (Astin 1968). Economist Howard Bowen, who has reviewed much of this literature (Bowen 1977, 1980, 1981), notes that the wide-ranging variation in the amounts of money institutions invest in their educational programs is not associated with any differences in educational payoffs. Bowen (1981) concludes: 'This apparent randomness [in educational expenditures per student] is tolerated . . . because no one knows with any certainty the relationship between money spent and true educational outcomes' (p. 27).

Do traditional definitions promote excellence?

Does the pursuit of 'excellence' in traditional terms tend to enhance the overall excellence of the system? Let us first consider the reputational conception of excellence. Because it is basically normative, the reputational view, by definition, limits the amount of 'excellence' that is possible within the higher-education system. In any competitive system – whether it involves athletic teams, television shows, or educational institutions – there must be winners and losers. Only a limited number of institutions can be considered 'excellent'; all others are necessarily relegated to lower positions. And if one institution manages to improve its rank, then some other institution must be displaced.

Moreover, the 'top-ranked' institutions account for only a small fraction (perhaps 5 to 10 per cent at most) of all institutions. In national ratings, then, at least half of all institutions – including most community colleges, many state colleges, and a great many small private colleges – get the same (low) rating, primarily because most raters are simply unfamiliar with all but a few institutions. Since familiarity is virtually synonymous with quality in the reputational approach, most institutions get the lowest possible rating.

Similar problems occur with the resources view of excellence: resources such as highly able students, highly qualified faculty, and money are finite. Thus, in a highly competitive and meritocratic educational system, the distribution of these resources tends to be highly skewed, with the few 'top' institutions monopolizing a disproportionate share and the many 'mediocre' institutions making do with whatever is left. Competition among institutions for the most finite resources – faculty and student talent – may serve to redistribute these resources, but it cannot increase the total pool available to the educational system as a whole. We are, in other words, playing a zero-sum game when it comes to student and faculty resources. Finally – and this is a subtle but very critical point – resource-based conceptions of excellence tend to focus institutional energies on the sheer *accumulation* or *acquisition* of resources rather than on the effective *use* of these resources to further the educational development of the student. Paradoxically, in the pursuit of resources, institutions *expend resources without generating more resources, thereby depleting the total pool.* While it might be argued that the combined efforts of institutions to acquire financial resources enlarges the total pool, this is not the case when it comes to student and faculty talent. Thus, in their efforts to recruit highly able students and faculty, institutions are, in effect, squandering extra resources. If these financial resources were redeployed to strengthen the *educational* programs of institutions, the overall excellence of the system might be significantly enhanced.

In a recent editorial in *Science*, Rice University president Norman Hackerman (1984, p. 577) poignantly observes how the pursuit of reputation and resources has distracted us from our primary education mission:

> Although we are properly impressed by fine ideas and impressive new salients into our ignorance, we are often bemused by a less rational view of such things as ranking – 'number one' and other such competitive trappings that develop in a vain desire to simplify evaluation of a complex system. This leads to an exhausting attempt by each field, each institution, each individual, to be number one. I have no interest in stifling ambition but intend rather to suggest that the process of educating individuals, because of the relative anonymity associated with it, has not maintained its proper pre-eminent position.

The limitations of the resources view of excellence can be illustrated with an analogy from the corporate world. Is it legitimate to conclude that a given company is 'excellent' just because it produces a lot of products (high output) or because it spends a lot of money to produce these products (high resources) – i.e., just because it has high 'scores' on measures of resource expenditures and output? Obviously not. In business, the cost of running a company and the products produced by the company can be evaluated only in terms of whether the company makes a *profit*.

The 'business' of academia, if you will, is not profit but talent development, or, more simply, *education*. And educational effectiveness must be judged in terms of talent *development*, not outputs or expenditures. As Bowen (1980) notes, there is a kind of unwritten law in academia that institutions somehow manage to spend whatever level of financial resources they manage to acquire. Some institutions that spend very little seem to have highly effective educational programs, while some that expend much larger amounts of money appear to have relatively ineffective programs.

In short, the pursuit of excellence – if that means no more than seeking to enhance an institution's reputation or to accumulate resources – can do little to improve the overall excellence of the system in terms of its capacity to develop student and faculty talent. Indeed, obeisance to the reputational and resources conceptions of excellence is counterproductive in that it wastes the limited financial resources available to invest in the educational program.

Do traditional definitions promote educational equity?

Does adherence to traditional conceptions of excellence promote the aim of educational equity? If one accepts the resources view there is a clear-cut conflict between excellence and equity, since the expansion of educational opportunities to more members of society (the pursuit of equity) necessarily requires that finite resources be distributed among a larger number of individuals, thereby diluting the average investment in any given individual and reducing overall excellence. Conversely, without an increase in the total resource pool, the only way to enhance quality (the pursuit of excellence) is to redistribute resources selectivity from one group to another, thereby reducing equity. Since resources are never infinite, the twin goals of equity and excellence are inherently in conflict when we embrace a 'resource' conception of excellence.

Similar problems arise with the reputational view. In our decentralized, diverse, and competitive higher-education system, it is inevitable that institutions will differ substantially in their reputations. Only a limited number of colleges and universities will emerge at the top of the reputational pecking order, and since the top-ranked institutions tend to attract a disproportionate share of applicants, many persons must be denied entry through the process of selective admissions. In reputational terms, these rejected applicants are denied an 'equal oppotunity' because they are not permitted to avail themselves of the most 'excellent' opportunities. And even if an institution succeeds in enhancing its reputation (becomes more 'excellent'), it subsequently tends to become more selective (less equitable).

EXCELLENCE AS TALENT DEVELOPMENT

If the development of human capital is indeed the principal *raison d'être* of any system of higher education, why not define the 'excellence' of an institution in terms of its ability to develop the talents of its students? The talent-development view of excellence emphasizes the educational *impact* of the institution on its students. Its basic premise is that true excellence lies in the institution's ability to affect its students favourably, to enhance their intellectual and scholarly development, and to make a positive difference in their lives. The most excellent institutions are, in this view, those that have the greatest impact – 'add the most value', as economists would say – to the student's knowledge and personal development.

In its simplest terms the talent-development conception of excellence focuses on *changes* in the student from the beginning to the end of an educational program. How does one judge whether or not an institution is 'excellent' in carrying out its talent-development function? Assessing an institution's reputation or its resources is a relatively simple matter. Assessing its success in developing the talents of its students is a somewhat more difficult task, one that requires information on changes or improvements in the student's performance over time. Under the talent-development model, students enrolling in the institution for the first time would be tested across a wide range of talent dimensions to determine their entering levels of competence. After they had completed appropriate courses or programs of study, the same or similar tests would be readministered to measure student growth.

Is talent development consistent with institutional purposes?

If one accepts the view that talent development is the primary purpose of higher education, then the talent-development view of excellence is, by definition, consistent with that purpose: that is, those institutions that are most successful in developing the talents of their students and faculty members are to be regarded as 'excellent'. It must be recognized, however, that because talent is multidimensional, no single yardstick of institutional excellence (in the talent-development sense) is appropriate. Different institutions may be 'excellent' in developing very different types of talent.

Does talent development promote excellence?

By focusing on the improvement of student performance over time, the talent-development view would seem to foster excellence by emphasizing the need to employ existing resources in such a way as to maximize student learning. Equally important, a given college's capacity for excellence, in talent-development terms, is not constrained by the degree of excellence attained by other colleges. Thus, unlike the reputational and resources views, which define excellence in comparative terms, the talent-development view permits institutions to attain high levels of excellence *without regard to what other institutions accomplish.* Of course, institutional comparisons can be made using the talent-development model, but such comparisons would still focus on the degree to which student performance improves in the individual colleges and universities. It seems reasonable to assume that inter-institutional competition to determine who is most effective at developing talent would be a more effective way to develop a nation's pool of human capital than competition to see who can amass the most resources or attain the best reputation.

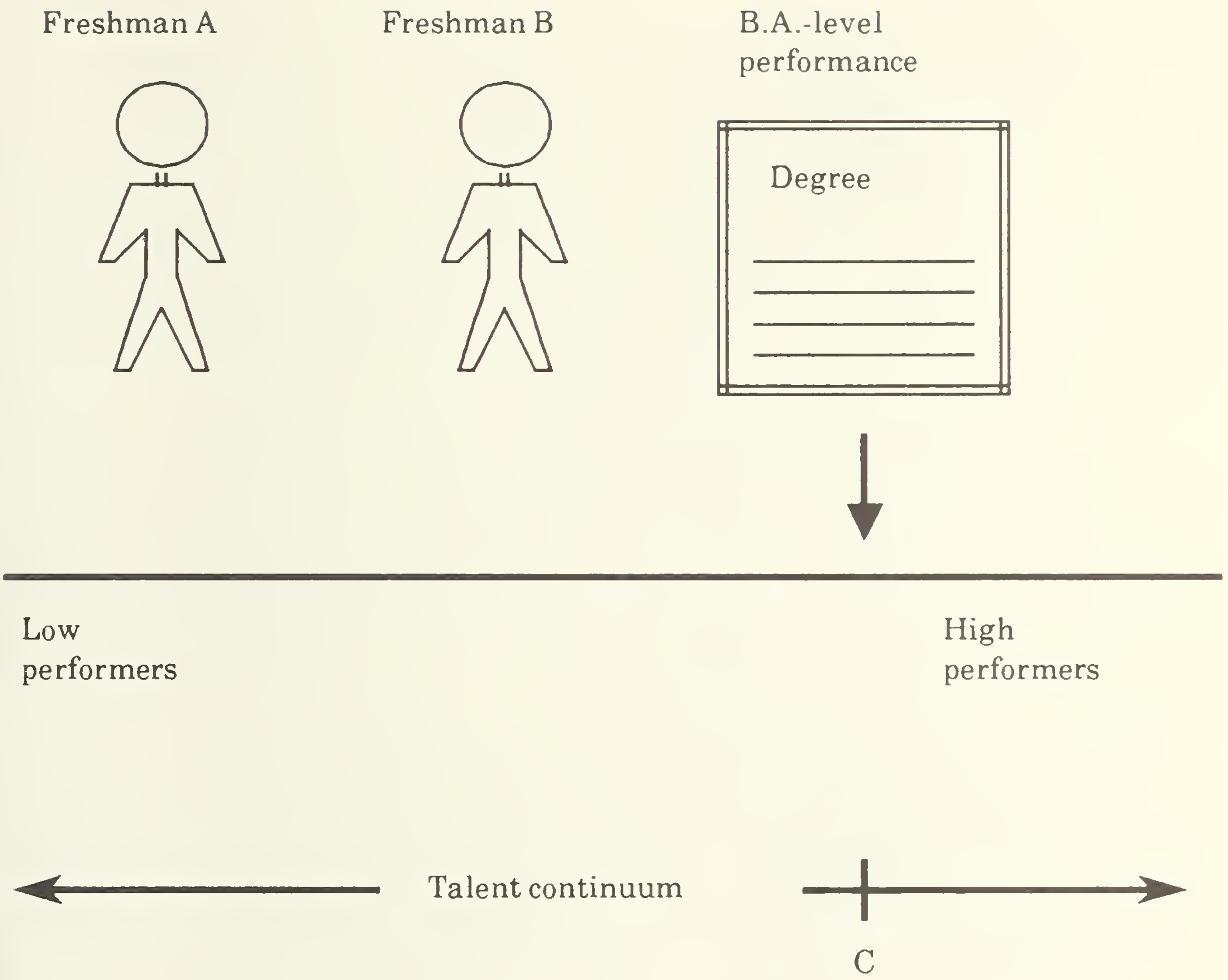
Does talent development promote educational equity?

Since excellence in talent-development terms emphasizes improvement in student performance, the education of high achievers is not necessarily given higher priority then the education of middle or low achievers. Rather, equal efforts are made to encourage student learning at all levels. No student is denied the opportunity for further education simply because he or she performs at a lower level than some other student. According to the talent-development view, any educational investment 'pays off' as long as the student continues to show progress. In short, the talent-development conception of quality promotes the cause of equity to a much greater extent than do any of the traditional conceptions.

TALENT DEVELOPMENT AND PUBLIC POLICY

The concept of talent development can be illustrated by means of simple diagrams. Figure 1 shows a hypothetical continuum of talent. It could represent any one of the many talents upon which undergraduate programs are focused, but for purposes of discussion let us say that it reflects the student's communication skills. The figure shows two freshmen and a point on the continuum (C) which is defined as the level of proficiency in communication required for receipt of the bachelor's degree as indicated, for example, by some minimal score on the test used to measure this particular talent. One purpose of the institution's educational program is to move both students (A and B) over to the level of proficiency designated by point C. Both students have a considerable distance to travel (i.e., a lot to learn) before they reach this level, but A has a longer way to go than B. Depending upon

FIGURE 1
A continuum of talent



the institution's admissions standards, A may be an average student and B a superior student deserving of advanced placement. On the other hand, B may be the average student and A a student admitted under some special-action program. In either case, A will probably require more time and resources than B to reach the designated proficiency level.

Two other facts are clear from Figure 1. First, the goal of most educational programs is not simply to enable students to reach minimal performance standards, but rather to enable them to exceed these standards by as much as possible. Thus, if both A and B gain the same amount in communication skills during their undergraduate years, B will still surpass A, even if both achieve the minimal standards. B's 'extra' competency is not necessarily superfluous: it may come in very handy depending upon what B plans to do after college. The second point is that both A and B could gain significantly in communication skills during the undergraduate years and still not reach the level required for the awarding of the baccalaureate. Under these conditions, it would *not* be appropriate to argue that the investment in these students was 'wasted', since the increment in communication skills might still prove very useful to them in later life. These facts illustrate an important principle about performance standards: they are necessarily arbitrary, since they impose a dichotomous cutting point on what is fundamentally a continuum.

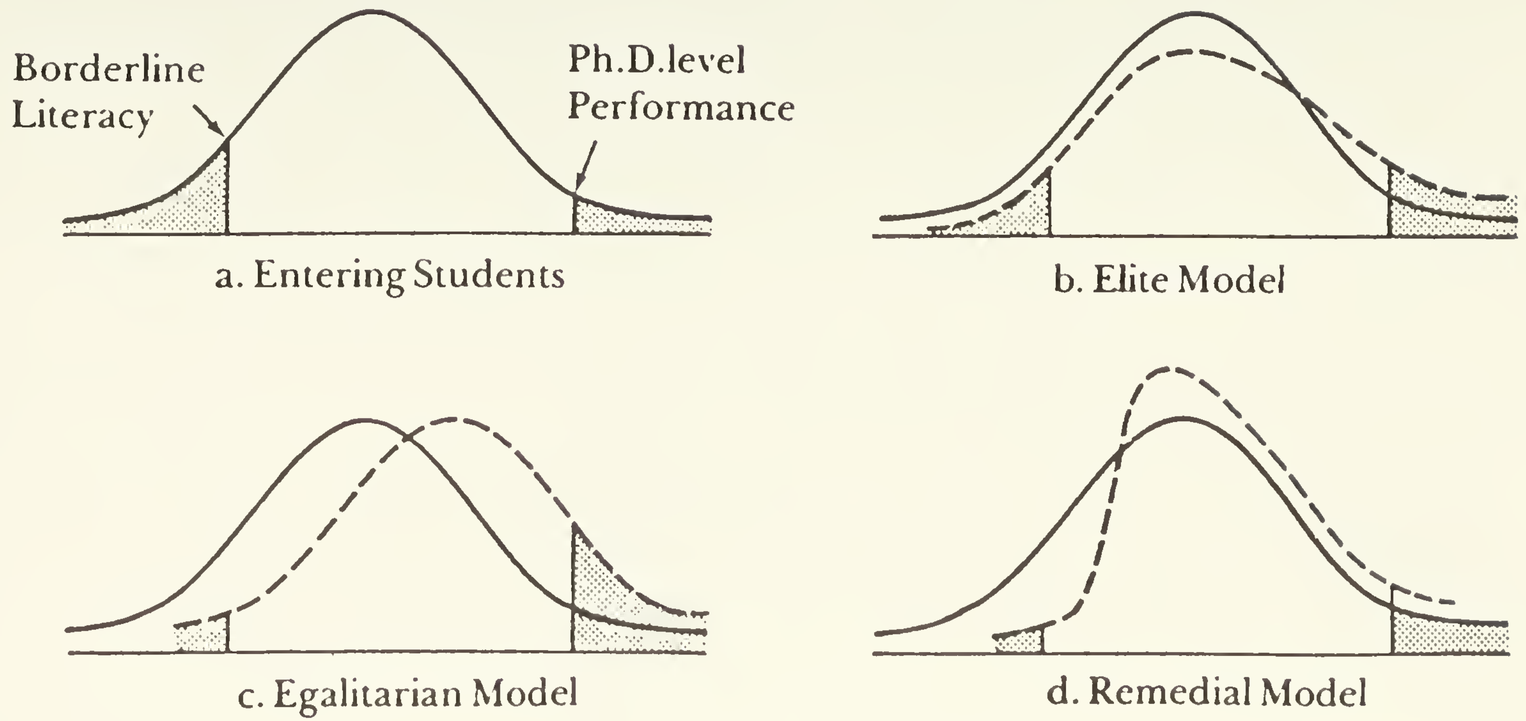
But the most important lesson to be learned from Figure 1 is that if an institution maximizes the talent development of its students, it will also maximize (a) the number of students who manage to attain minimal performance levels and (b) the 'margin of safety' by which students surpass minimal performance levels. In other words, the talent-development view of excellence is entirely compatible with 'maintenance of academic standards'.

One of the most appealing aspects of the talent-development view of excellence is that it provides a framework for discussing large-scale educational-policy objectives. To illustrate one such application of the concept, let us take the continuum from Figure 1 and show the entire population of college freshmen (Figure 2). The distribution shown in Figure 2 is normal in shape, but there is no necessary reason why the actual distribution of talent in the population could not assume some other shape. To label the extremes of this distribution, I have identified two major cutting points: 'borderline literacy' (at the low end of the continuum) and 'Ph.D-level performance' (at the high end). Let us assume now that the normal distribution shown in Figure 2a represents the scores of the total population of college freshmen at the point of matriculation to college. Note that, at this point, only a very few members of this population are performing at the Ph.D level, while a substantial number are performing at or below the borderline-literacy level. (The shaded areas of the distribution are arbitrary; they have been drawn simply for illustrative purposes.)

Now if the purpose of the higher-education system is to develop talent, this goal can be specified in terms of *desired changes in the*

FIGURE 2

Hypothetical distribution of talent in the population of entering college students (2a), and three possible outputs of the higher educational system expressed in terms of changes in the shape of the distribution (2b, 2c, 2d)



a. Entering Students

b. Elite Model

c. Egalitarian Model

d. Remedial Model

characteristics of the distribution. An almost infinite number of such changes are possible: Figures 2b, 2c, and 2d represent only three basic kinds of changes. The solid line in each of these three figures shows the desired shape of the distribution after four years of college (the output performance of the students), and the superimposed dotted line shows the distribution at the point of matriculation to college (students' input performance). The first of these hypothetical changes in the performance distribution is shown in Figure 2b. Here the proportion of students performing at near the Ph.D level has increased substantially, while the performance of those at the lowest end of the distribution remains almost unchanged. This type of policy can be characterized as 'elitist', in the sense that it emphasizes increasing the proportion of very high-performing students but pays little attention to the students at the lowest end of the continuum.

Figure 2c portrays an alternative educational scenario that involves an upward shift in students' *mean* performance only. Note that the entire distribution has simply shifted to the right and that the shape of the distribution remains unchanged. Given that everyone appears to benefit equally, a policy which produces the distribution in 2c may be referred to as a 'democratic' or 'egalitarian' policy.

A third alternative policy is shown in Figure 2d: it is concerned primarily with minimizing the proportion of low performers by improving the performance of those who start out at the low end of the continuum. Here the number of persons performing at or near borderline literacy is greatly reduced, but the number performing at the Ph.D level changes only slightly. Because it aims primarily at eradicating illiteracy, such a policy can be labelled 'remedial'.

Many other changes in the distribution of scores are, of course, possible. Our higher-education policies in the past have tended to be a mixture of elitist and egalitarian plans, with a smattering of remedial plans. A selective admissions policy is clearly elitist, whereas an open admissions policy tends to be egalitarian. Special programs for disadvantaged students are remedial in the sense that they invest disproportionately in the education of the lowest-performing students. The value of the talent-development model is that it permits policymakers to specify, in concrete terms, just what their objectives are. Those objectives will vary, of course, depending upon the institution, the state or region of the country, and many other factors.

This view of talent development raises a number of other intriguing questions. For example, what types of educational programs are most likely to produce the largest gains at various points on the continuum? What are the relative costs of these programs? What individual and societal benefits are associated with increments at various points on the continuum? Do investments at the high end of the continuum have significant payoffs in terms of increased scientific and technical advances? Are there 'points of diminishing returns' as far as investments on various points on the continuum are concerned? How much of an increase or a decrease in talent occurs among students who do not attend college (the maturation effect)? Considering their obvious bearing on our higher-education policies, it is unfortunate that these questions have received so little attention from researchers. One possible reason for this paucity of research is the lack of good longitudinal information on talent development. Without systematic data on how much people's talent levels change over time, it is very difficult to obtain reliable answers to these important policy questions.

This way of looking at talent development also dramatizes the importance of the admissions process. Let us assume for a moment that the distributions shown in Figure 2 are based not just on entering college freshmen but on the entire population of high-school graduates. Clearly, the higher-education system cannot hope to develop the talent of individuals who do not enter the system. These same individuals, it must be pointed out, are not only part of the population; they are also part of the nation's 'talent reservoir'. If our public institutions are to modify their policies regarding who is encouraged or permitted to attend a postsecondary institution, then policymakers might appropriately use this model to assess the likely consequences of such modifications: i.e., to gauge their probable impact on the development of the total talent reservoir within the states.

ADMISSIONS POLICIES

Of all the areas in which public policy can make a difference for higher education, admissions is perhaps the most critical. As already mentioned, the talent-development conception entails an approach to admissions that differs markedly from the approaches taken in support of traditional conceptions of excellence. Under the reputational and resources models, priority is given to high-performing students, whereas low-performing students are regarded as a liability. Under the talent-development model, the state has a stake in educating people at all levels of competence and preparation.

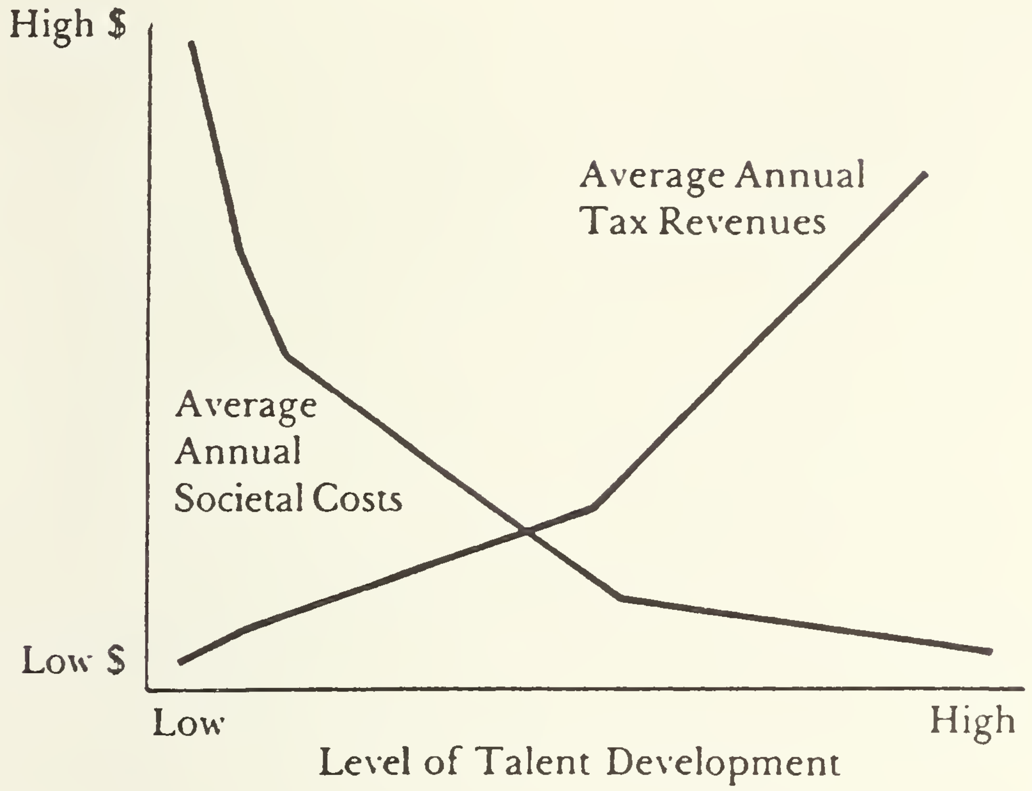
As is well known, education confers certain benefits on society as well as on the individual (Bowen 1977). Better-educated citizens are likely to contribute substantially to society in the form of increased tax payments, and of reduced costs exacted by crime and by institutionalization.

Figure 3 illustrates these relationships in the form of two hypothetical functions. The descending curve shows simply that the lower the individual's level of developed talent, the more the individual will cost society in terms of welfare payments, institutionalization, and the like. The ascending curve shows that the higher the individual's level of developed talent, the greater the average tax revenues. The point where the curves cross is the societal break-even point, at which the average social costs are balanced by the average tax revenues.

Note that because the cost curve descends very rapidly at the very low end of the developed-talent range, a given increment in talent at the low end of the talent continuum yields a much larger reduction in welfare costs than an equal increment in talent higher up on the continuum. The reverse is true for tax revenues. A given increment in talent at the high end of the continuum produces a greater increase in tax revenues than an equal increment at the low end. I should emphasize that these curves are hypothetical and that the real curves might have somewhat different shapes. As the curves are drawn now, the sum total of the benefits (welfare savings plus additional tax revenues) deriving from a given increment of talent is roughly equivalent all along the talent continuum. If this were the real state of affairs in our society, it would presumably justify equal educational investment at all levels of developed talent.

But how much does it really cost to develop talent at different levels? Although there is distressingly little empirical evidence bearing on this critical question, let us consider another hypothetical case. Figure 4 shows the hypothetical costs of obtaining a given increment in talent at different levels of developed talent. The curve indicates that developing the talent of people at the low end of the continuum is

FIGURE 3
Hypothetical relationship among level of talent, average annual societal costs, and annual average tax payments

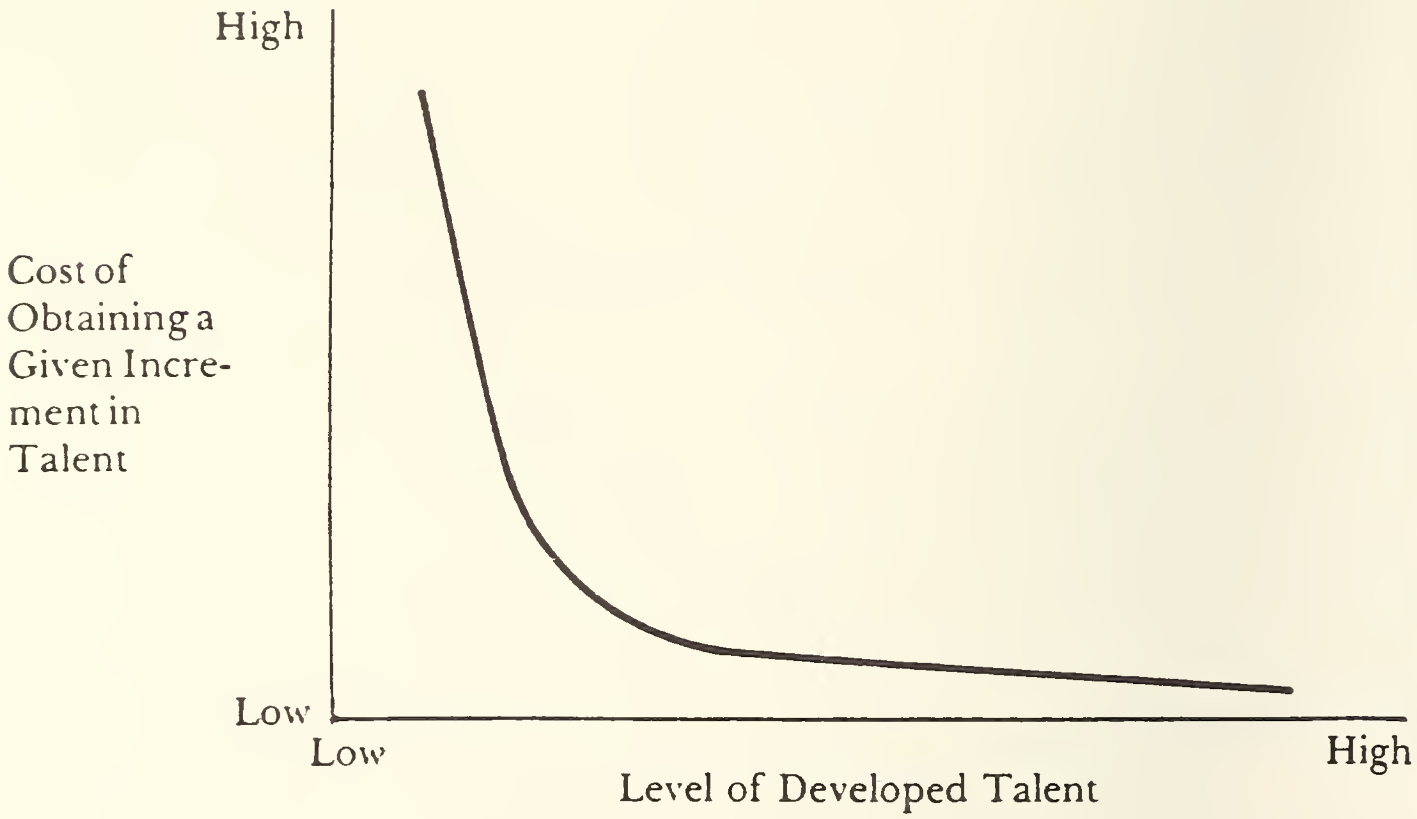


much more costly than developing the talent of people at the high end. (Such a result would be consistent with the widespread belief that remedial education tends to be costly.) Note, however, that the real curve might be much flatter, indicating that a given investment of educational resources produces roughly equal increments in talent at all levels of developed talent. If empirically-based functions like the ones shown in Figures 3 and 4 could be constructed, it would then be possible to formulate an educational policy that would maximize the overall economic benefits to society.

CAN WE BE 'OVEREDUCATED'?

Discussions of access to higher education frequently focus on the question of how many college-educated persons a nation's economy can or should be expected to accommodate. When the system of post-secondary education in the US was rapidly expanding during the late 1960s and early 1970s, some observers began to question whether the

FIGURE 4
Hypothetical costs of a given increment of talent at different levels of developed talent



society was becoming 'overeducated'. Among the more popular treatises on this subject were Ivar Berg's *The Great Training Robbery* and Richard Freeman's *The Overeducated American.*

My view of these issues is that 'overeducation' is a fiction. It is also a dangerous fiction – one that may even become a self-fulfilling prophesy if it remains unchallenged by policy analysts and more particularly by educational and governmental leaders.

What makes the 'overeducation' notion especially appealing to some politicians is that it has been buttressed with a good deal of evidence on 'rates of return' that looks, on the surface, to be scientifically valid. The argument runs as follows: twenty-five years ago college graduates earned much more than people without college degrees, but this earnings gap has narrowed to the point where going to college no longer represents the sound investment it once did.

I have two objections to the reasoning behind this argument. First, I cannot accept the idea that making more money is the only reason or even the most important reason for going to college. (I shall return to this objection shortly.) But even if we accept for the moment the idea that people go to college only to make more money, the 'evidence' supporting this argument is based on some very unrealistic assumptions.

Briefly, data have been presented showing that the rate of return on an investment in a college education has fallen from roughly 14 per cent 25 years ago to less than 10 per cent today. In other words, if you look at college as an investment, it's a poorer investment than it used to be. To accept such figures, we are first asked to assume that people who decide *not* to go to college will instead get a full-time job and, more important, will take the money that they would otherwise have spent on a college education, put it in a money market or savings account, and leave it there for four years to collect compound interest.

Now I don't know about you, but I can tell you for sure that in my family these would be very unrealistic assumptions. My own financial history follows what I have come to call Astin's Law of Family Economics, where you always manage to spend everything you make, plus a little more. Another unrealistic assumption underlying the rate-of-return argument is that the money for college would still be available if the person decides not to go to college. My parents footed the bill for most of my education, and I am sure the same is true for many college graduates today. I can imagine the look on my father's face if I had said, 'Dad, I've decided not to go to college after all, so please give me the money you would have spent for college so I can invest it and maximize my rate of return for *not* going to college'. A similar argument can be made for those who receive financial aid while attending college. That money simply would not have been available if they had decided not to attend college. In short, these rate-of-return analyses are based on such unrealistic assumptions about human behaviour that it is difficult to take the results seriously.

And how appropriate is it to use lifetime earnings as the measure of the value of college? Is financial gain the only reason why people go to college? I think there is ample evidence to suggest that, even if having a degree conferred *no* economic benefit, a great many people would still go to college. Many students are pursuing careers that require a college education; others want to develop their abilities or special talents; still others simply enjoy learning! Moreover, research on college students shows that students benefit from a liberal-arts education in many ways: they develop a more positive self-image, they develop a greater sense of intellectual and interpersonal competency, they develop a great appreciation of the arts, and they develop more tolerant views and attitudes toward others (Astin 1977). Those who argue that our citizenry is 'overeducated' are, in effect, asking us to discount all of these non-monetary benefits. Of course, I think we can make a much stronger case for the opposing view: that if *more* of our fellow citizens took advantage of the opportunities for learning and personal development offered by a college education, the quality of life in general would improve greatly.

By objecting to the idea that we are 'overeducated' I don't want to suggest that we are not producing a great many college graduates these days, or that some of these graduates do not have problems finding a good job. Because so many people today are college graduates, a bachelor's degree no longer *guarantees* a good job. But does this mean that fewer people should be getting college degrees? What if we had applied the same kind of logic to the high-school diploma 40 years ago? When the number of persons graduating from high school reached nearly 80 per cent of the age group, we would have argued that a high-school diploma no longer guarantees the job opportunities that it did back in the 1920s and 1930s. Should we then have discouraged students from completing high school? Would it have benefited the society 40 years ago if we had set about to reduce the number of people finishing high school? I think not.

But perhaps the most persuasive evidence about the importance of higher education today is contained in the unemployment statistics: the *less* education you have, the greater your chances of being *unemployed*. Although we hear a lot of stories these days about unemployed college graduates, people with no college education have twice the unemployment rate as do people with college degrees. And people with graduate training have the lowest unemployment rates of all. The moral of this story is clear: even if a college graduate's prospects for landing the ideal job are not so hot these days, the prospects of a person with no college degree are just that much worse. Graduating from college may no longer be a guarantee of the good life, but it sure helps.

SUMMARY

In this paper I have attempted to discuss the issue of access to higher education from both a theoretical and policy perspective. Much of the opposition to proposals to expand access is based on the argument that quality will suffer. I have tried to show that such arguments utilize faulty conceptions of quality or 'excellence', and that much of the conflict disappears when we define excellence in terms of the institution's capacity to develop talent (i.e., human capital).

The talent-development view also provides a powerful model for examining a wide range of policy questions concerning access to post-secondary education and the funding of higher education. In particular, the talent-development approach permits scholars and policymakers to assess the societal implications of various admissions policies and examine the individual and societal benefits associated with educational investments at different levels of ability.

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Accessibility to universities in Ontario

David Stager

INTRODUCTION

Accessibility has many meanings, especially as it is applied to postsecondary education. Sometimes the term relates to changes in the potential student group resulting from policies that would change the total enrolment, while at other times it relates to the different enrolment probabilities for different groups in the population. When one moves on to consider equality of accessibility, the discussion can become more confused, as some authors deal with equality of actual participation rates while others focus on equality of opportunity or choice. In either case, the analysis deals with the factors bearing on the decision to enrol in postsecondary education. In some cases equality of educational opportunity is treated as the ultimate goal, while in other cases this is seen as a means to a further objective, namely equality of employment opportunity and particularly the opportunity to enter occupations with higher earnings and prestige.

Factors influencing accessibility to and demand for university education are shown in diagrammatic form in Figure 1. Although there is a long list of such factors, these can be conveniently summarized by the three boxes representing matters concerning eligibility, motivation, and availability. The broken-line box at the bottom of Figure 1 is a reminder that educational and employment opportunity is not only influenced or ensured through admissibility. Students must not only

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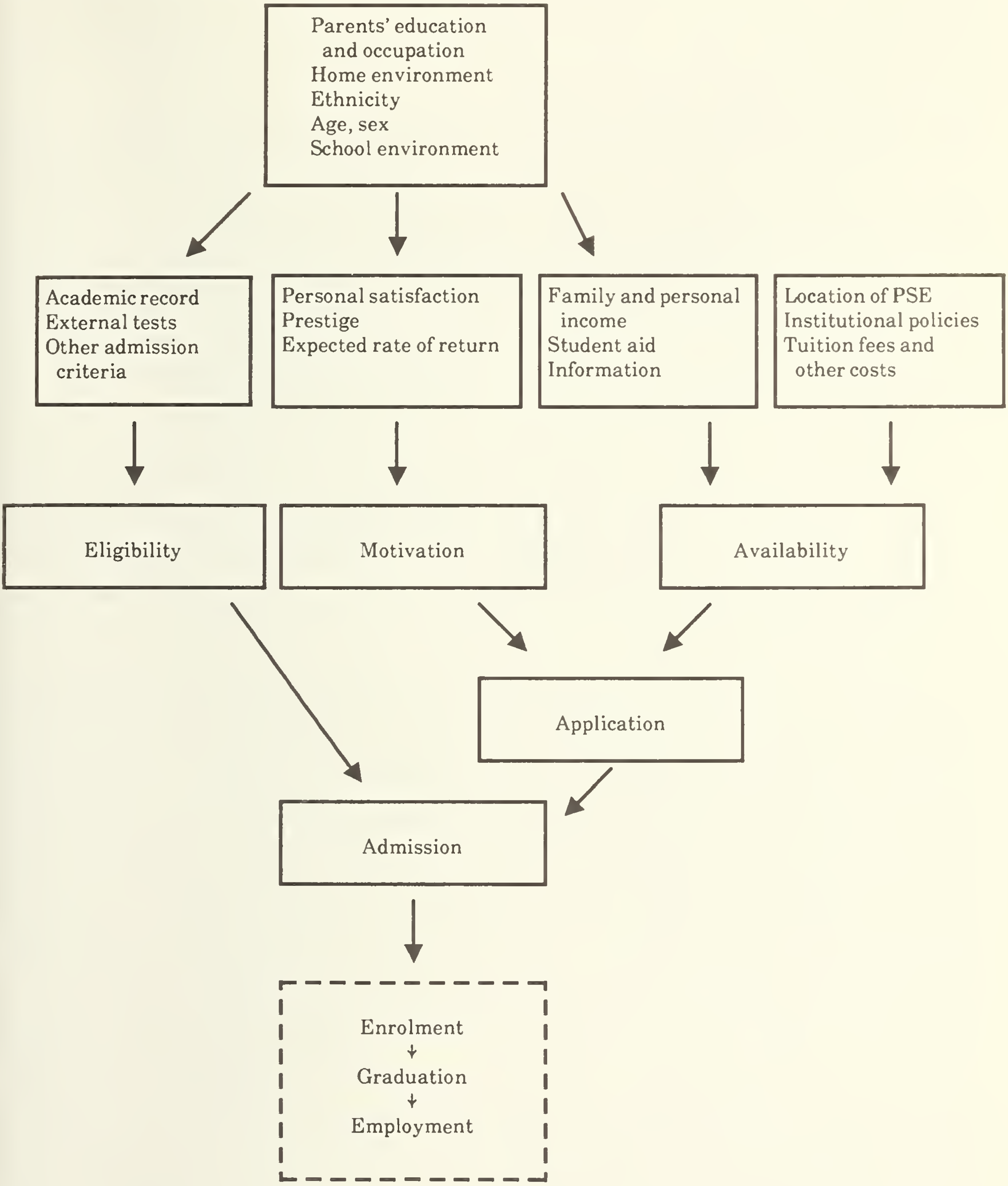
This paper is an abbreviated version of a report (Stager 1984) prepared for the Commission on the Future Development of the Universities of Ontario (Bovey Commission).

FIGURE 1
Factors influencing accessibility to and demand for university education



enrol, but also graduate and gain employment. These stages are also affected by the same factors that affect admission; in other words, the social and financial difficulties that reduce a student's probability of getting admitted also limit his or her probability of graduating (Manski and Wise 1983, p. 11).

Equality of accessibility or of educational opportunity is sometimes defined as equality of participation. There is no reason, however, to expect that all groups in the population would be represented equally in the higher-education system. Instead, an emphasis on equality of opportunity would require that the factors affecting eligibility, motivation, and availability be reviewed continually to see where action could be taken to inform, clarify, guide, and enlarge the range of opportunities or choices available to any given individual.

The Ontario government's current policy on accessibility

> promises that a place in some program at some Ontario university, but not necessarily the program or university of first choice, will be provided for every academically qualified student who wishes to pursue university studies. (see Ontario 1981, p. 11)

The earlier accessibility policies of the 1960s assumed that the government's role was to use public monies to assure an adequate number of places in Ontario's postsecondary-education institutions for the rapid growth in demand resulting from the postwar baby boom and increasing personal incomes. There was also a belief that students with the appropriate level of academic ability but without financial support should not be barred from higher education. Thus, policies were geared to supply-side concerns, in that the government ultimately set the tuition fee as well as the number of places available.

More recently, demand-side concerns are being addressed, in that it has been recognized that demand for higher education is not autonomous but can be influenced by public policy. It is felt that demand may be influenced within the existing structure of postsecondary education through, for example, policies that are directed towards either the secondary schools or the labour markets for postsecondary graduates.

ECONOMIC DETERMINANTS

The cost of higher education is often seen simply to be the tuition fee, yet the true cost to students also includes the earnings forgone by not having full-time employment. These earnings, even after adjustment for income tax and some part-time employment, have been estimated to constitute about 50 to 60 per cent of the total cost of an undergraduate university education.

The effect of changes in tuition fees on enrolments is usually measured in terms of the price elasticity of demand for higher education, or the percentage change in enrolments resulting from a given percentage change in the tuition. For example, if a ten per cent increase in fees caused a five per cent reduction in enrolments, the elasticity would be –5/10 or –0.5. Calculation of tuition-fee elasticity is difficult, however, because increases in fees are often coupled with increases in grants for lower-income students. Thus, one needs to look at the effect of changes in net fees or net educational costs.

Tuition-fee changes and differentials in tuition fees among programs are unlikely to have much effect on enrolments since fees are actually a small part of the total cost of university education. When forgone earnings are taken into account, tuition fees often represent less than ten per cent of the student's costs. An increase in fees of ten per cent would thus be an increase of only one per cent in the total cost of education. Even if a student does not include the full amount of forgone earnings in his or her cost calculation, it should be obvious that a tuition-fee increase is less important in this total context than when it is viewed alone – as is usually the case in public-policy decisions. There is, however, a difficult empirical question with this argument. Fees are a direct expenditure that must be financed with 'hard cash', while forgone earnings are a forfeiture of income that needs to be replaced only to finance room and board and other personal expenses.

Several studies exist that analyse the effect on enrolment of changes in tuition fees. In most studies, the elasticity of demand (or enrolment) in response to a tuition-fee change is found to be less than –1.0, indicating that a ten per cent increase in tuition fees, for example, would result in less than a ten per cent decrease in enrolment.

An Ontario study by Handa (see Handa and Skolnik 1972) seems to be the only one that estimates enrolment elasticity based on the total education cost including forgone earnings. For the 1950-65 period, this was calculated to be –1.46 for university undergraduates, highly elastic by comparison with most of the results reported for tuition-fee effects alone. The same data were used to estimate that a doubling of tuition fees would reduce enrolment by only 10 to 15 per cent.

Several studies find that the enrolment response to tuition changes is affected by student ability, family income, and other factors usually included in accessibility studies. Students with high ability and from high-income families, for example, are the least responsive to tuition changes (Bishop 1977). Furthermore, Bishop and Van Dyk (1977) find that adults (over 24 years) undertaking part-time studies were much more sensitive to fee changes than were younger, full-time students.

The effect of changes in tuition fees compared to the same dollar-value changes in other costs (such as room and board, travel, and forgone earnings) has been analysed in only a few studies. Bishop (1977) finds that tuition changes have three times as strong an impact on enrolment as do changes in other direct expenses, and that changes in forgone earnings have only one-fifth the effect of tuition fees; that is, that a $100 increase in tuition fees has the same result as a $500 increase in forgone earnings. But this difference in impact can be readily explained: when forgone earnings are increasing (due to higher wages for high-school graduates) students recognize that it is worth their while to stay in school, in that their prospective employment opportunities as university graduates are also improving. Moreover, the earnings from part-time work to finance educational costs are also increasing.

A different study concludes that changes in tuition fees and in forgone earnings have almost the same effects on enrolment with the tuition effect being only slightly stronger (Fuller, Manski and Wise 1984).

The family income of young (18 to 24 years) full-time students plays a major role in the enrolment decision. Galper and Dunn (1969) find that, in the United States from 1919 to 1964, the elasticity of enrolments with respect to family income was 0.69; that is, that a ten per cent increase in real disposable income results in an enrolment increase (in four-year colleges) of almost seven per cent. This is very similar to the effect found by Hu and Stromsdorfer (1973): an income elasticity of 0.78 for public four-year colleges in Massachusetts. Other studies have found a higher income elasticity. Campbell and Siegel (1967) estimate an income elasticity of 1.20, and Handa calculates that the elasticity was as high as 6.0 for Ontario undergraduates during 1950 to 1965 (see Handa and Skolnik 1972). Foot and Pervin (1983) estimate the income elasticity for Ontario-university undergraduates in 1979 to be slightly above unity, namely 1.09. This figure is much closer to the estimates reported above for the United States and suggests that the 1950 to 1965 experience was unique.

Economic considerations also enter the enrolment decision through the student's assessment of the rate of return on educational investment – calculated by looking at the expected greater income in light of the expenditures for tuition and supplies as well as forgone earnings. It may be argued that although students do not as a rule make explicit and detailed calculations of such rates of return, they do at least behave *as if* they took such estimates into account. In fact, it has been argued that the postsecondary expansion in the 1960s and 1970s was not so much due to the demographic bulge as to favourable economic expectations, and that the current slowing or decline in enrolments is due mainly to worsening economic conditions (Gordon 1981, p. 139). It is important to focus on the rate-of-return approach because it encompasses changes in labour-market conditions as well as educational costs, and is thus able to explain an increase in enrolments even with higher fees if there is an increased demand for graduates of the program. In fact, evidence shows that, over time, changes in the rate of return generally account for more of the variation in enrolments than do fees or family income (see, for example, Freeman 1971).

As Figure 1 suggests, a student's expected rate of return is influenced by sociocultural factors as well as by institutional costs and labour-market conditions. This arises because expectations depend on family and school influences and because future earnings for graduates of any given program may vary by age, sex, ethnicity, and other cultural characteristics. For example, a study in the United Kingdom found that 16-year-old males expected a rate of return on their first degree to be ten per cent, while females expected it to be eight per cent (Williams and Gordon 1981). From this viewpoint, the educational demand or access question is more properly seen as an issue of employment opportunity.

GEOGRAPHIC PROXIMITY

Geographic proximity of a university as a factor influencing enrolment has not been studied as fully as the other economic and social factors discussed in this paper. There is considerable evidence that students from rural areas and small towns and cities are less likely to enrol in university than those from big cities, but it is not clear what intervening factors here are having an effect. For instance, do parents of a given income/education/occupation group who live in a small town have the same influence on their children's educational decisions as parents who choose to live in a metropolitan area served by one or more universities? Do school and peer-group influences differ systematically by geographic location?

Close proximity to a university could have two effects. Costs would be lower to the extent that a student lives at home rather than in a university residence. There could also be a differential effect on attitudes and information: a student living in a university city likely has a better knowledge of programs available, admission criteria and probability of admission, and employment opportunities for graduates.

The empirical evidence seems to suggest that geographic proximity is *not* an important influence on enrolment. A major American study concludes that this factor, when other student characteristics were held constant, was not significant in explaining differences in enrolment rates in general:

> Our simplest conclusion, in brief, is that spacial accessibility to one or more colleges has little effect, for most youth, on whether they will attend college – be the accessible school a junior college, an open-door four year college, or a more selective institution. (Anderson, Bowman, and Tinto 1972, p. 267)

The authors do note, however, that proximity *may* have an effect on certain minority groups, such as black students in some areas of the United States. This general result is confirmed by Hopkins (1974) who finds that institutional proximity influenced the choice of *type* of postsecondary institution but not the probability of continuing on to postsecondary education.

SOCIAL AND CULTURAL FACTORS

The list of of 'social and cultural factors' that have an impact on the probability that a student will pursue higher education is likely endless, but the main groups of factors usually considered are parents' education, occupation, and home environment, ethnic origin, student's age and sex, and the peer-group and school environment.

Students tend to make general educational plans early in their school life, because such plans are often conditioned by family environment. It is increasingly evident that these cultural influences, and not financial need as such, determine whether students will pursue postsecondary education – and especially a university education. Many studies document the fact that students whose parents did not complete secondary school have a much lower participation rate in university education than children of more educated parents (see especially Halsey, Heath, and Ridge 1980). But it is also widely observed that among students who complete their secondary schooling, there is a similar percentage who go on to university regardless of family background. The key issue then is to discover why students leave the educational system before finishing secondary school.

The influence of a student's peer group appears to have more impact on the postsecondary decision the less support there is from parents. Conversely, peers are least influential in the case of young people whose parents have some direct experience of postsecondary education (Gordon 1981, pp. 127-8).

Beyond the factor of parents' education lies a combination of influences that include parents' schooling but also comprises a set of interactive variables that sociologists describe collectively as social class or 'socio-economic status' (SES). This combination includes schooling, occupation, income, and sometimes race, language, and other factors that determine one's social status. To attempt to summarize here the findings from sociological studies of the association between social class and university participation rates would do a disservice to the comprehensive analyses found in the major studies of postsecondary accessibility in Ontario or Canada during the past decade. Instead, the reader is urged to refer to these reports, including those by Pike (1970); Porter, Porter, and Blishen (1973); Buttrick (1977); and Anisef, Paasche, and Turrittin (1980).

ALTERNATIVE FINANCIAL-AID POLICIES

Tuition fees

Lower tuition fees, it is argued, would be more effective in promoting broader accessibility than an increase in student aid because financially-disadvantaged potential applicants are likely to have more information on fees than on student aid. However, the cost of increasing access through this approach is very high. Further, even 'free' or zero-tuition is unlikely to affect university enrolment very much, as tuition represents only a minor part of the cost, and because so many other factors influence a student's decision. For example, in Sweden, where there are no tuition fees, it is still found that students from high-income families are more likely to choose longer, university courses, and that children from the lower-income families are more likely to choose shorter, nonuniversity courses, presumably due to the forgone-earnings effect as well as parental influences on motivation and career choices (Woodhall 1970, p. 136).

Similar results occurred in Australia, where tuition fees for post-secondary education were abolished in 1974. A comprehensive survey in 1976 (Anderson et al. 1980) concludes that the overall social composition of students entering higher-education institutions in the two or three years following the abolition of fees 'appears to have changed very little'. The authors of the same report noted, however, that these groups, now underrepresented, would be the ones most affected should there be a reintroduction of fees. Such groups include part-time students, women, older students, rural residents, and students with low socioeconomic status (p. 197).

Grants and loans

Larger student grants are also seen as inefficient in promoting broader accessibility, because the financial benefit would go to many students who have already enrolled in the absence of such incentives. Further, Jackson and Weathersby (1975) report that to increase the participation rate in higher education by one percentage point, by means of a $100 increase in financial aid to each student, actually amounts to $4,100 for each *additional* student enrolling in higher education (pp. 649-50). Although these numbers would not necessarily apply to Ontario's university system in the 1980s, they do illustrate the inefficient effect of direct student aid to increase enrolment.

Advocates of more student aid in the form of grants rather than loans have argued that students are reluctant to accept a debt obligation, particularly if they are from a lower-income class. However, Porter, Porter, and Blishen (1973, p. 162) find that students from lower-income families are more prepared to borrow to finance their education than students from higher-income families.

One way to eliminate financial barriers to further education without producing undesirable distribution effects that arise from low-cost tuition and other subsidies to university education is to establish contingent-repayment student-assistance programs. Such programs have been advocated frequently during the past two decades, and minor variations on the scheme have been implemented.[1] They could be introduced with the following general features:

- Any student at a postsecondary-education institution would receive an advance equal to part or all of educational costs.
- The student's advance would state the conditions of repayment commencing with the first employment year. These would include the percentage of annual gross or taxable income to be paid to the student-aid fund; the number of years for which payments would be required; and the interest rate to be applied.
- An individual who, because of low earnings, had not repaid an amount equal to principal plus accumulated interest by the end of the repayment period (say 30 years) would not be required to make further repayments.
- The program would be administered by an independent agency that would establish a fund from which it made advances directly to students.
- Initially, funds would be raised by issuing government bonds and later through payments received from graduates.
- The agency could administer a means test, provide grants, subsidize the funds, or alter its activities in a number of ways on instruction from the government.

One of the most important implications of the program would be that the risk of this method of borrowing would be borne by the general public and not the individual, thus making the scheme appear very attractive to many students. However, the public would bear this risk only to the extent that an individual graduate does not realize notable monetary benefits from his education. An added benefit of the program is that it also relieves the taxation burden from those members of the community who have never participated directly in the postsecondary system.

Certain criticisms have also been directed at the proposed scheme. The fear has been expressed that students would hesitate to take on a repayment 'burden' lasting for twenty or thirty years. But at this point, the distinction between this plan and fixed-debt plans must be made clear: unlike fixed-debt obligations that require fixed payments at fixed intervals, the contingent-repayment system allows for low or irregular payments in response to low or irregular incomes. In addition, an opt-out provision would permit individuals who began to earn very high incomes to leave the scheme at a faster rate.

CONCLUDING OBSERVATIONS

The most common observation in the extensive literature on accessibility to higher education is that financial conditions are not a significant barrier for the great majority of potential students. Financial factors have their influence mainly on the student who is only marginally committed to going to university. In other words, if a student is not highly motivated or is undecided about what postsecondary program to take, the educational costs may be seen or used as a reason for not going.

A second major observation is that despite the enormous expansion in numbers and types of postsecondary institutions and in student-assistance programs, there has been relatively little change in the composition of university enrolments. Pike (1981) concluded that for Canada

> there was no indication that the university expansion [of the 1960s] had been accompanied by more than a small increase in the participation rates of students of lower class origins relative to the participation of students from the more privileged classes. . . In other western countries . . . the picture would appear to be generally similar: for example, in Britain, France and the United States . . . the state universities and the prestigious private institutions continue to draw from predominantly middle and upper middle class populations.(p. 5)

The same conclusion is reported more recently for Australia. Anderson et al.'s (1980) review of several studies for that country showed that 'the social composition of students in higher education appears to have changed little over time' (p. 197).

The third major observation is related to the two preceding ones: it is that the level of the parents' education is perhaps the strongest single influence on a student's decision whether or not to undertake postsecondary education, especially at a university. This will be an extremely difficult barrier to overcome. When there is low parental education, students generally receive little support or guidance on plans for higher education. Peer-group influences become stronger, and, for this group, the peer group usually has a negative effect. Attempts to offset these negative influences through providing more information, counselling, and financial incentives may be only relatively successful, in that such services would also result in a more significant increase in enrolment of the group with higher parental-education levels. Young people from the upper-middle class, for instance, would recognize that they need to strive more vigorously to maintain their relative position in the occupational and social structure (Anderson et al. 1980).

An issue that is perhaps more fundamental than the appropriate *relative* participation rates of different social groups concerns the overall participation rate: what should it be? This was a primary question in the 1960s when governments were attempting to provide enough university places to accommodate an autonomous demand. The question now arises again in terms of the government's potential for inducing demand. The economic answer to this question is relatively easy: expand or contract enrolment until the social rate of return (as distinct from the student's private rate of return) is equal to the rate of return realized by the allocation of resources to other sectors of the economy. But nonmonetary costs and benefits that are almost impossible to identify, even conceptually, require that there should be a blending or integrating of the economic view with a socio-political view of the appropriate participation rate.

NOTE

1 Yale University introduced a deferred or postponed tuition plan in 1971, under which students can defer tuition and accommodation costs to later repay them through a percentage of their subsequent annual income. Unpaid balances are forgiven after 35 years. Duke University has introduced a more limited scheme for

deferring tuition only, but with similar provisions for repayment as a percentage of income over a period of 30 years.

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Accessibility from the viewpoint of a university

J. Clark Leith

In focusing my remarks on the question of accessibility from the viewpoint of a university, I shall address briefly three broad areas:

- the relationship among accessibility, quality, and financing;
- the relationship between accessibility and capacity; and
- the matter of accessibility and equity among applicants.

QUALITY AND FINANCING

Accessibility is not a matter that can be treated in isolation from whatever budget the society is willing to commit and the quality of the system that is desired. The relationship among quality, financing, and accessibility involves a complex interaction which I shall outline first.

The quality/numbers tradeoff

At a micro level, as in, say, a particular professional program such as medicine or engineering, most would accept this proposition: given a fixed budget, there is a quality/numbers tradeoff. Indeed, it is commonly accepted that for this reason, professional programs have a fixed capacity and that admission beyond that capacity would significantly affect program quality.

Figure 1 illustrates the analytical point. Here, the multiple dimensions of quality have been collapsed into a single scale, although it is

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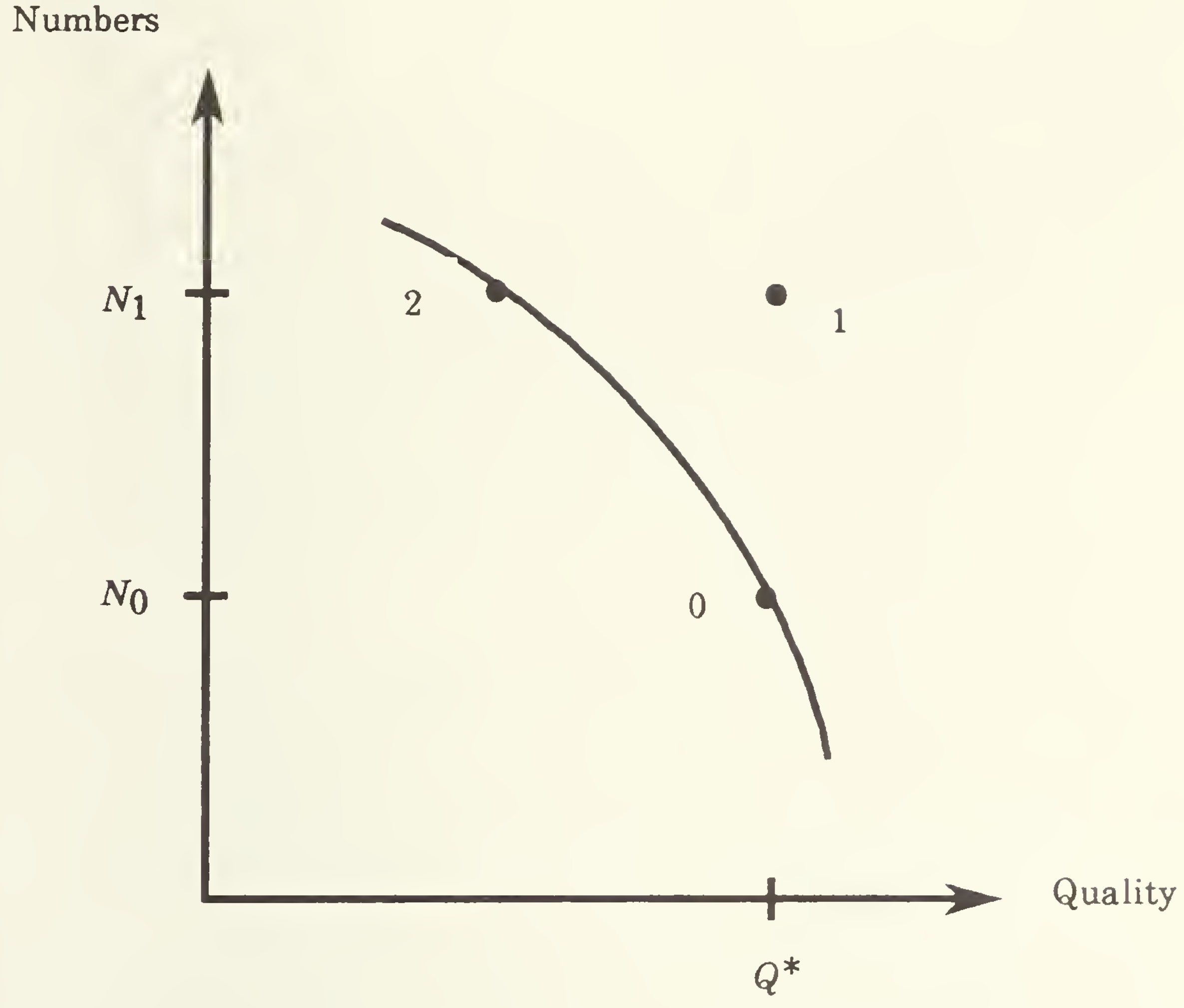
FIGURE 1
Quality/numbers trade-off



recognized that for all practical purposes quality includes many elements, some of which are inherently immeasurable and others of which have measures of dubious precision. The desired level of quality is indicated by Q^*. The quality/numbers relationship is presented in a manner familiar to economists: a downward-sloping line is drawn for a given budget so that as numbers rise, quality declines. For simplicity, we illustrate this as a curve.

The role of policy in choosing outcomes

In considering the consequences of alternative policy regimes, the key point to realize is that once two of the three variables (quality, numbers, and budget) are fixed, the third is also fixed.

Two different policy regimes (*A* and *B*) are discussed below. Choices to be made within these regimes are also noted and compared.

Policy *A* – accept all qualified students

1 Maintain quality constant. Consequently, if numbers expand, the budget must also expand to maintain quality constant, such as from the initial position 0 to position 1 in Figure 1. This approach was taken in Ontario until the mid-1970s: for both individual universities in particular and for the system of Ontario universities in general, as numbers expanded, revenue expanded. The rate at which revenue increased was 50 per cent less than the rate at which numbers increased. This is illustrated in Figure 2 by the line labelled 'old formula'. Where the additional costs of expanding were less than this additional funding, this arrangement had the obvious effect of encouraging expansion of university enrolment. However, the principal problem for the government was that the 'old formula' forced the government to *fund* that expansion.

2 Maintain budget fixed. Returning to Figure 1, we see that the quality must decline as we move from the initial position 0 to position 2 as numbers expand. This is the arrangement we have had *since* the mid-1970s. The change would be easily shown in Figure 2 by changing the axes to read 'share of revenue' and 'share of students'. The consequences of this arrangement are well known: it too encourages the system to expand, but the cost to government does *not* grow; resources for expanding institutions are drawn from stable-enrolment institutions. As a result, the quality of the system declines. In one small respect the system was changed last year: the incremental revenue that comes from expanding one's share of students was reduced (see Figure 3). Note, however, that this change occurred *after* the system as a whole had expanded.

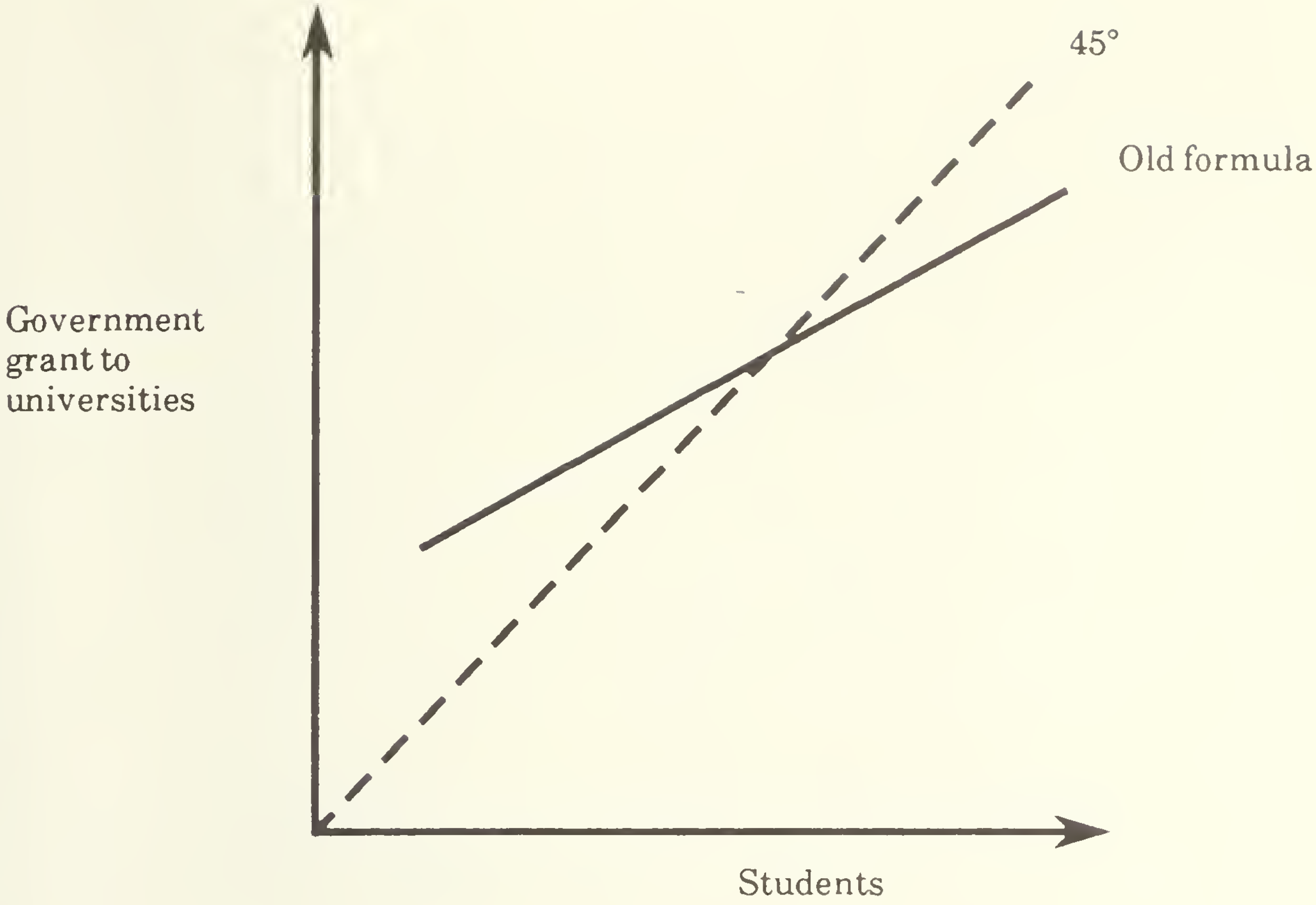
Policy *B* – establish the quality of the system that is desired

The comparison of policy choices within this regime is facilitated by considering some desired quality level such as Q^* in Figure 1.

1 Grant determines budget (i.e., the position of the tradeoff curve). Given the desired quality Q^* and the budget, the number that the system can handle is N_0 (in Figure 1). The problem that the government has with this arrangement is that the size of the system is a consequence rather than a policy choice.

2 Government sets the numbers. In this case the government sets

FIGURE 2
Financing



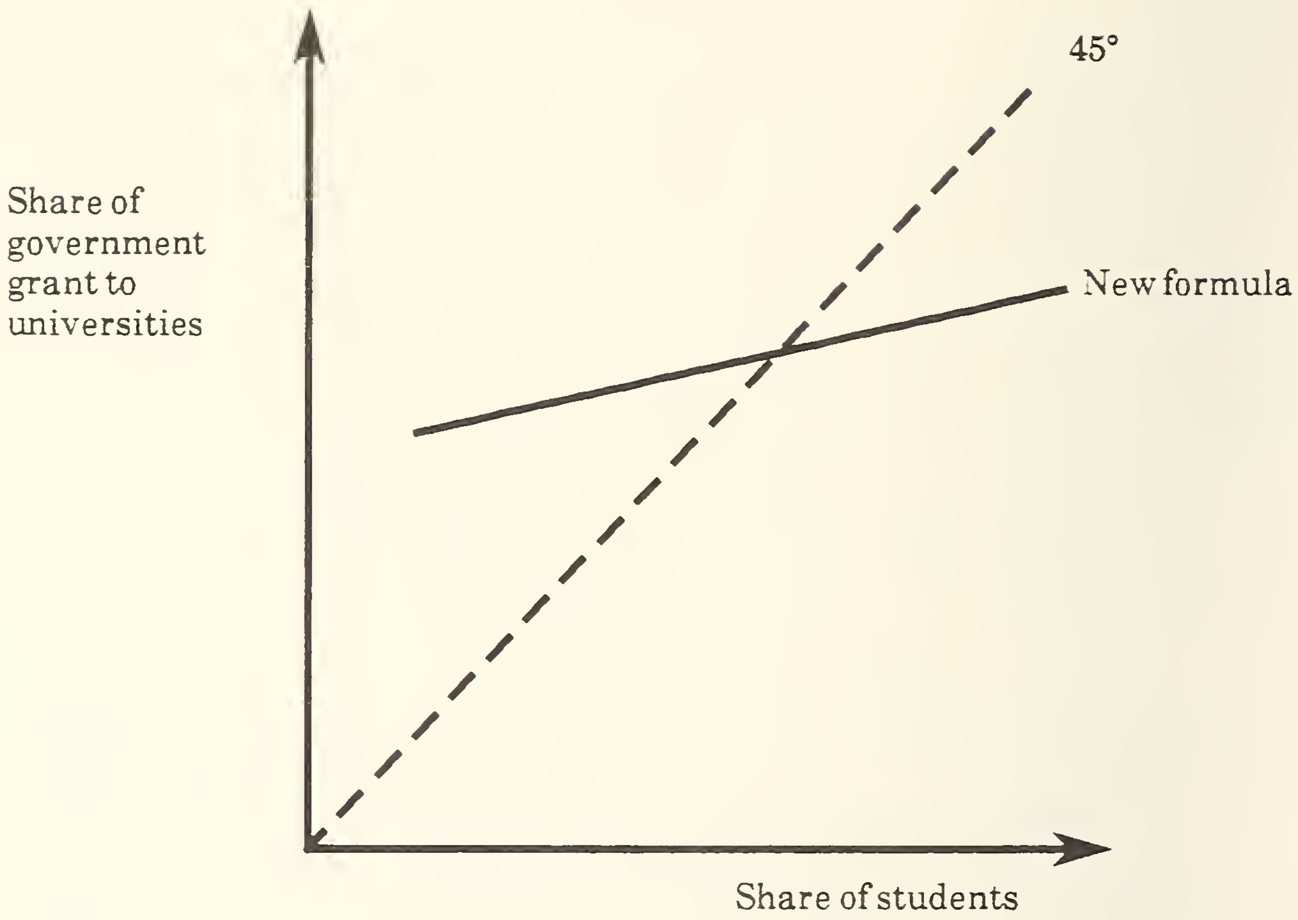
both the desired quality (Q^*) and some desired numbers level (such as N_1). The budget required to meet the quality objective is thus the outcome: it would have to be a budget that permitted a tradeoff curve passing through point 1 of Figure 1. This, of course, takes us back to an arrangement similar to that in place in the early 1970s.

The conclusion I draw from this is simple: all three variables – quality, accessibility, and numbers – are interrelated. A rational policy regime would recognize this, and would devise a policy arrangement that established the *quality* of the system and the *numbers* of students that government is prepared to *fund* adequately. There would thus be no unintended outcomes for either the government or the university system.

The 'OSIS double-cohort problem' and the policy regime

To illustrate the importance of the policy regime, consider what will happen when the 'OSIS' (Ontario Schools, Intermediate and Senior)

FIGURE 3
Distribution of total budget among universities



double cohort[1] hits the universities in 1988. If we continue with the current policy regime, in which the system accepts all qualified students and the budget is fixed, there will be a *substantial* movement *along* a tradeoff curve from a point such as point 0 to point 2 in Figure 1. The result for the university system would be a very serious excess-demand pressure on the system's capacity and deterioration in the quality until the cohort finishes passing through the system.

Another serious consequence is the distributional effect that the current formula would have on those institutions that prefer to maintain quality at the expense of numbers: their share of students would decline precipitously, and as a result, while the quality of the entire system declines, precisely those universities wanting to maintain quality would have a more than proportionate reduction in funding per student than would the system as a whole.

The available evidence concerning the OSIS double-cohort problem is sketchy at best because 1984 is the first year in which OSIS students are entering the secondary schools. The *potential* magnitude

FIGURE 4

Alternative projections: students completing university-entrance requirements

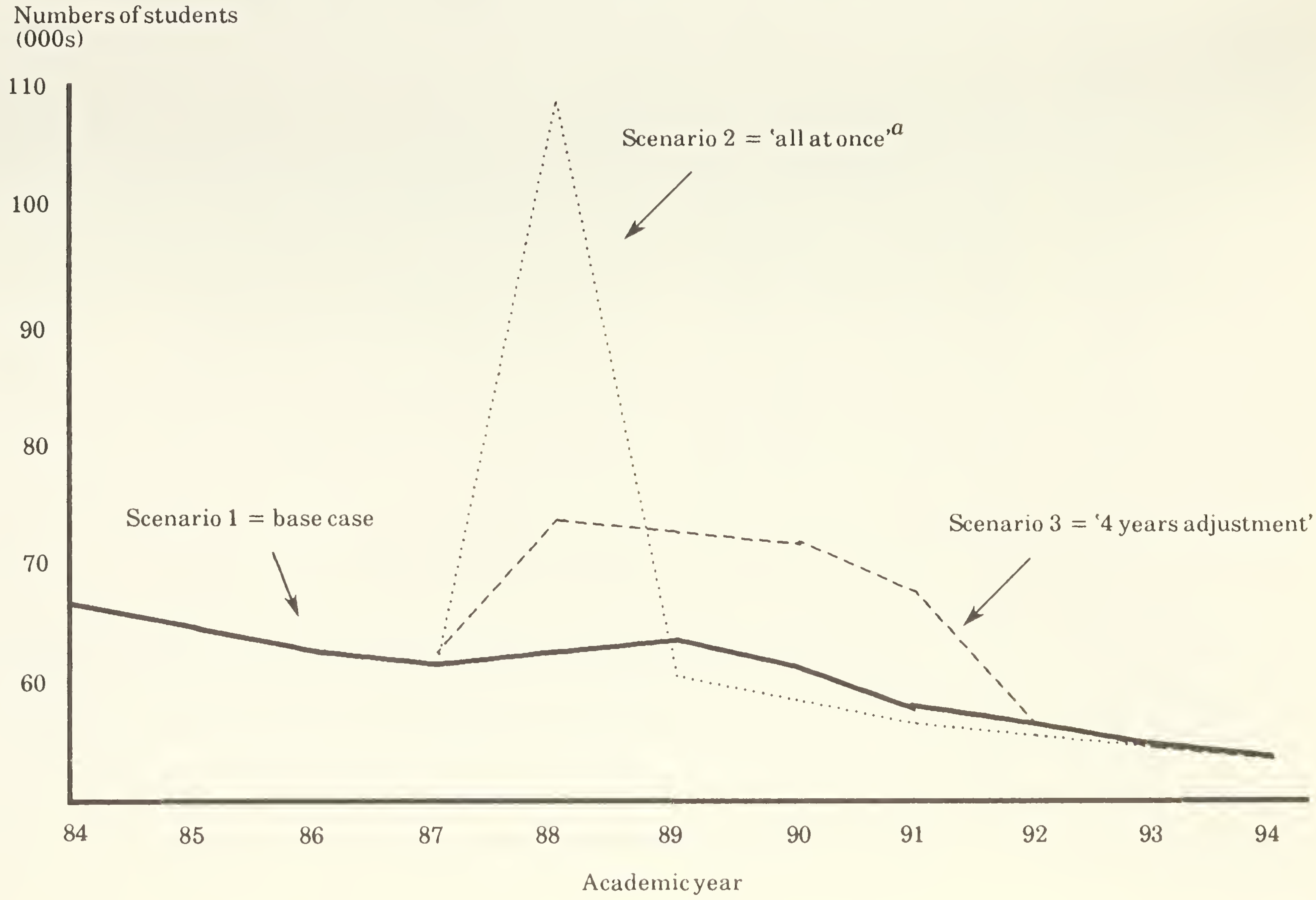


FIGURE 4 continued

NOTES: All projections assume that 42 per cent of grade-9 class go on to complete university-entrance requirements (OAC completion).
Base-case projection assumes that speed of completion does not change from present: hence projection is as if grade 13 remained in place.
Alternative projections assume that 75 per cent of those students completing university-entrance program requirements do so in four years of study:
a 'all at once' case assumes that switch to new program occurs immediately so that full double-cohort impact is felt in 1988;
b 'four years adjustment' case assumes that switch to new program is spread over four years.

of the problem is clearly serious, however (see Figure 4). Even if the percentage of Grade-9 students that progress through to completion of university-entrance requirements stays constant at the current 42 per cent; if only three-quarters of the students complete high school in four years; and if the impact is spread over four years, if the budget for the university system is fixed, the universities are still bound to have a serious excess-demand or quality-deterioration problem in the year 1988 and beyond.

FIXED COSTS, CAPACITY, QUALITY, AND ACCESSIBILITY

The second major issue concerns the relationship between accessibility and capacity. The operation of a university has much in common with high fixed-cost industries. There is a long-term commitment which must be made in order to operate. It is that commitment of resources which creates the capacity. Below capacity there is some substantial elasticity to expand output at relatively low incremental costs, but once capacity is reached, the costs of expanding activity are substantial.

The fixed costs of a university are a combination of physical capital, human capital, and an organizational/institutional framework. The latter two require enormous lead-times to create. Typically, creation of new capacity takes more than a decade.

A feature of high fixed-cost activities is that they are more able to withstand temporary revenue shortfalls because the replacement of capital can be delayed. Such living off the capital may not show up for some time, but in the end the collapse is all the more spectacular. Living off the capital is also a characteristic of universities, and explains why it is possible to have extended periods of reduced funding without the consequences showing immediately and publicly.

Whatever the short-run variation, in the long run, accessibility depends on the existence of capacity in the university system. To create and sustain that capacity in the long run requires a continued commitment of resources.

EQUITY AND ACCESSIBILITY

The third and final major issue is the matter of equity in dealing with accessibility. When unlimited accessibility is not possible, we have a problem of the equitable assignment of access among competing candidates.

Rationing by merit

Most accept the appropriateness of rationing access on a merit basis to professional programs such as medicine. However, is it equitable to ration by merit if candidates are starting from *unequal* bases? For example, is it equitable to use a merit basis to allocate spaces for handicapped students, francophone students, and/or native students? In such cases of clearly defined inequities, universities tend to make compromises.

Inequities in educational preparation

Given the general rationing-by-merit approach, many have sought a system that permits measurement of merit across all applicants. If, however, we accept the argument that 'merit' is really 'ability to benefit' rather than some measured level of achievement at some particular time, and that such ability is reasonably equally distributed across all subgroups (such as high-school students in each city), then all that is necessary to do is to measure *relative* ranking *within* each subgroup on a consistent basis. This leads to the conclusion that a measure such as high-school marks is as good a predictor of university success as any other measure which might be available.

Our own studies at Western have shown this result very strongly. We examined the correlation between Grade-13 averages and first-year averages of students entering Western's arts/science/social-science faculties in September 1980, 1981, and 1982. We found a correlation of .65. This correlation is about equal to the predictability of university success in the U.S. when both secondary-school and standardized tests are employed together. Further, this is the same correlation that was noted between second- and third-year grades of those students who continued at Western.

The search for an equitable solution to a rationing problem that requires consistent measurement of all applicants' ability to benefit from access to university is inherently a search for the impossible. Instead, what can be done, and indeed is being done, is to use some reasonably comprehensive measure that ranks students consistently within subgroups, together an alternative 'second-choice' measure that can be used on those who are perhaps unfairly denied access in the initial rationing. The absence of some perfect rationing device should not obscure the need for keeping the total numbers of students at a level that the government is willing and able to fund adequately and of a quality that is in keeping with Ontario's place as one of the leading regions of the industrialized world.

NOTE

1 See the paper by Alan King later in this conference volume for a more detailed description of the OSIS double cohort.

Changes in the monetary return to education in Canada from 1971 to 1981: some preliminary findings

Martin D. Dooley

Canada has experienced a substantial increase in the number and growth rate of labour-force entrants during the last twenty years, although the rate of increase subsided in the latter part of this period. This increase was especially marked for individuals with post-secondary training. As a result, the labour force has come to be more heavily populated with young workers and highly educated youth in particular.

During the late 1960s and early 1970s, a number of studies analysed the relationship between earnings and education. These studies are reviewed in Stager (1982). However, relatively little work has been done in this area with Canadian data more recent than that of the 1971 census. The objective of my current research is to begin the task of filling this gap in the literature. Today, I wish to discuss briefly some of the more salient findings to date.

Two basic questions have been addressed.

1 During the 1970s, what changes occurred in the relative earnings levels of male workers with different levels of education?
2 To what extent can any such changes in relative earnings be attributed to changes in the relative supplies of workers?

As indicated above, few Canadian studies have considered these issues. Zsigmond et al. (1978) show that during the 1970s, a weighted average of starting salaries for *selected* bachelor's-degree graduates fell substantially, relative both to average earnings in industry and to

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the average earnings of all 20-to-29-year-olds in the labour force. In the same report, it is shown that unemployment rates among all young labour-force participants (ages 15 to 24) clearly have risen relative to the national average since the mid-1960s. However, there has been no discernible trend in the relation between unemployment and education. Freeman (1981a) reports a decline during the 1970s in the *income* of individuals with university training relative to those with less education. However, the decline for younger age groups (25 to 34) is small compared to the United States and other countries in this study. Siddiqui et al. (1981) provide some indirect evidence for Ontario in the form of a reported increase in 'under-employment' (as measured by stipulated job requirements) among university graduates during the late 1970s. However, comparisons across education levels are not presented.

The two questions noted above have been analysed more extensively in the United States. The two principal investigators have been Richard Freeman of Harvard University (1976, 1979, 1981a, b, c) and Finis Welch of UCLA (1979 and Murphy, Plant, and Welch 1983). Freeman and Welch agree on two conclusions. First, during the late 1960s and the first half of the 1970s, there was a decline in the ratio of the earnings of young, male, university graduates to the earnings of young workers with a high-school education. Second, this phenomena was caused, at least in part, by the labour-market entry of the baby boom and the especially rapid growth in the number of university graduates.

Points of disagreement in the literature

Substantial disagreement characterizes the further interpretation of these findings. The disagreement centres around two questions. First, were these changes in relative earnings mainly caused by changes in supply? Second, would these supply effects be concentrated in the early years of the work life?

Welch answers yes to both questions. He argues, for various reasons, that the earnings of more-educated youth should be more sensitive to supply changes. Hence, the disproportionate losses suffered by university graduates do not signal necessarily a marked decline in the relative demand for workers with greater levels of schooling. Welch also asserts that such supply effects are concentrated early in the work life and that earnings 'recovery' will be rapid for the baby-boom cohorts as they blend into the experienced labour force. Such earnings recovery, Welch argues, will be more pronounced among the highly educated, thereby serving to re-establish traditional earnings differentials across levels of education. Hence, Welch expects no major weakening of the relationship between schooling and earnings for either the members of the baby-boom cohorts once they exit the early stages of the work life or for the smaller cohorts which will enter the labour force in the 1990s. He concludes that the realignment of earnings differentials during the 1970s was a transitory phenomenon.

Freeman disagrees with Welch on his answers to both questions addressed. He sees the relative-earnings loss of young university graduates as reflecting both a declining relative demand for and an increasing supply of more educated workers. In addition, he believes that earnings recovery among baby-boom cohorts has been relatively weak and, in particular, that there is no evidence of more rapid earnings growth among the more educated.

Both points of disagreement are relevant for public policy. If Welch is right, the labour market for the young, and the highly educated young in particular, may have suffered only from a case of temporary indigestion rather than chronic ulcers in the 1970s. During the 1990s, neither new labour-force entrants nor those who entered in the 1970s will experience a markedly weakened relationship between earnings and education. But if Freeman is right, the monetary return to education among new entrants will remain somewhat weak unless there is a change in the relative demand for labour of different schooling levels. Furthermore, the entrants of the 1970s will continue to pay a price for their membership in exceedingly large cohorts.

Research in progress on Canadian males

The Canadian data used in my study are from the Survey of Consumer Finances (SCF). Six SCF microdata tapes are now publicly available from Statistics Canada for every other year from 1971 through 1981. Hence, I have used six independent samples that measure individual levels of earnings, labour-force activity, and demographic characteristics.

The analysis is confined to the earnings of males. This reflects neither interest nor policy relevance but rather the serious theoretical and econometric problems posed by the frequently intermittent nature of the market work patterns of women.

The basic samples consist of males aged 20 to 64 who, during the period for which earnings are reported, had positive earnings and weeks worked. Excluded from the analysis are the self-employed, as well as individuals who were out of the labour force at any point due to schooling, retirement, or permanent disability. Three different levels of aggregation are used: Canada, Canada except Quebec, and Ontario. Separate analyses are also performed for full-time workers.

The most serious limitation of the SCF data is that individual data are restricted to the head of the census family and the spouse. This means that from the data one cannot observe those never-married adults who were living with their parents. Statistics Canada calculates that the increase in the size of our 1971 and 1979 samples would be approximately 13.5 per cent were this restriction to be relaxed. The restriction undoubtedly affects estimates of mean earnings from each of our cross-section samples. However, the focus of this study is on intertemporal change in the earnings of individuals within given levels of education and age. Hence, one can appeal to the apparent constancy in the proportion of observations excluded by this restriction in order to provide some support for the validity of inferences drawn below.

There are five preliminary findings which I wish to report today. All concern the earnings of individuals with a university degree relative to those with a high-school education.

First, during the period 1971 to 1981, there was a reduction of between 5 and 10 percentage points in the relative-earnings differential between university graduates and those with a secondary-school education . Hence, the data indicate a decline in the monetary benefits of a university degree.

Second, the above is true of virtually all age groups except the oldest (60 to 64). This contrasts with the U.S. finding that the compression of earnings difference across education groups was concentrated among younger males. The latter observation has been used to argue that there has *not* occurred a general decline in the demand for more educated American workers.

Third, the compression of earnings differentials across education groups largely occurred in the period 1971-77. During this initial period, the earnings of workers with a secondary education rose at a rate which was 3 to 11 percentage points higher than those with a university degree. From 1977 to 1981, however, this difference was typically much smaller and, for several age groups, university-degree holders had a higher rate of earnings growth.

Fourth, our results confirm the hypothesis that large cohort size lowers earnings, particularly at young ages. However, unlike Welch, we do not find that effect to be more severe at higher levels of education.

Finally, these data indicate that changes in cohort size are *not* capable of providing the primary explanation for the reduction of earnings differences between men with a university degree and those with a secondary education. The principal reason for this is that, as indicated above, such earnings compression occurred among both younger and older men. Our estimated effects of cohort size do *not* predict this phenomenon among older workers. Further, the predicted earnings compression among younger men is much smaller than what actually occurred.

In summary, our data presently indicate that the earnings advantage of more educated male workers declined in Canada during the first part of the 1970s. However, changes in the relative supply of male workers with different schooling levels can account for only a portion of this phenomenon at best.

Several alternative explanations for the observed reduction in the monetary returns to a university degree deserve further research. The wage controls of the mid-1970s may have contributed to the phenomenon; however, the data indicate that the process started early in the decade. Changes in the relative demand for workers of different educational levels has received little attention and merits much more. Finally, it must be emphasized that the above results must be taken as tentative due to the limited information in our data set. Our ability to measure the quantity and quality of formal education, as well as other productive characteristics, is so restricted that strong conclusions must await additional confirmation from the 1981 census and other data sources.

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Factors affecting access to jobs

Benson A. Wilson

While the bulk of my commentary today will be directed to the question of access by university graduates to jobs, there is one matter concerning the question of access by students to universities that I would like to raise. I raise this partially because I believe we need to re-examine our thinking about accessibility in light of it and partially because it establishes some of the groundwork necessary for looking at the question of job accessibility for graduates.

Participation rates

In the past few years we have become accustomed to thinking of access to university in terms of participation rates in the neighbourhood of 14 to 15 per cent. Both the Bovey Commission itself in its background data (1984) and the Council of Ontario Universities (1983) employ such numbers. These are, of course, derived using a convention that measures participation rates as that fraction of the population aged 18 to 24 that is *currently* enrolled in university, as a full-time *undergraduate* only. For trend analysis and for comparisons of participation rates between jurisdictions, this provides a good standardized way of making comparisons, but it seems to me that, for the purposes of policy considerations, the use of such a ratio is misleading and helps to perpetuate a myth about the degree of elitism in university participation.

Several methodologies, all of them admittedly approximate, lead me to suggest that we should be thinking of universities serving somewhere between 25 and 30 per cent of the population rather than just

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the 15 per cent between ages 18 and 24 that happen to be currently enrolled as full-time undergraduates. The roughest approximation comes from using the measured participation rate for 18- to 24-year-olds, that is, about 15 per cent, and multiplying by two in consequence of the assumption that the average participant will be in university roughly 3.5 years of the seven-year age span covered by the group aged 18 to 24. Admittedly, variations in the size of individual cohorts and the arbitrary use of 3.5 years among other factors render this approximate, but it does give an indication.

A second measure can be obtained from the tables submitted by the Council of Ontario Universities (COU) in its brief to the Bovey Commission (COU 1984, Appendix C), in which year-by-year participation rates are outlined. Summing the participation rates by individual age group from age 18 up to the later age of 27 and again dividing by the somewhat arbitrary 3.5 years, one comes to a participation rate of about 26 per cent. In fairness I should note that although this higher rate is used in its brief to the Bovey Commission, most of the time the COU employs the lower rate of 15 per cent discussed earlier.

A third measure, and the one that first triggered my interest in this topic, comes from a report on the 1976 census by Statistics Canada (1976). Here, a survey of 25- to 29-year-olds shows that in Ontario, 26.6 per cent of the group had attended or were attending a university. In passing I should note that the participation rates of the 1970s that led to this statistic would certainly have been lower than the currently measured participation rate. It will be interesting to see what figures emerge from the 1981 census.

If we add to this 25 to 30 per cent figure the number of young people who obtained alternative postsecondary education, notably at the colleges of applied arts and technology (CAATs), we soon realize that the postsecondary system of Ontario is serving at one time or another approximately 50 per cent of the relevant population. Recognizing full well the difference in numbers between those who enter college and university and those who graduate and enter the labour force in the category of graduates, the question I leave hanging is: from a socioeconomic-policy perspective, how much more accessible should postsecondary education be, given that we already are looking at roughly a 50 per cent participation rate rather than the 20 to 25 per cent that is commonly used to illuminate these debates?

Employment

Turning now to my principal mission of discussing some of the factors affecting access to employment by and for university graduates, let me first note the general scenario recently painted in a report by the Ontario Manpower Commission (1984).

In this report, which projected employment prospects under three alternative economic scenarios, we noted that:

> The employment outlook for university and community college graduates appears to be promising. Even if the economy remains stagnant, it would have almost as many job openings requiring postsecondary graduation as the number of new entrants with these qualifications. If it speeds up to the level of the medium- or high-growth scenarios, the projected job openings would slightly outnumber the combined total of new and currently unemployed graduates. (p. xii)

Notwithstanding this general statement, it is recognized that specific imbalances by particular skills or disciplines may well develop. It is our desire to refine this report so that we will be able to address these imbalances somewhat more explicitly in future.

Recognizing that university graduates along with other young people entering the labour market (a) are anxious about their job prospects; (b) know that unemployment rates are higher than they have been for graduates in the recent past; and (c) hear about technological displacement, I would like to make three main points.

– Although graduates capable of working on the forefront of high technology will indeed be crucial to the long-term economic health of this province and country, the majority of jobs will not be in high technology *per se*.

– While access to employment for university graduates will be good, graduates will have to adjust to the realities of entering the labour market as the tail end of the baby boom.

– Under any economic scenario that has been projected for us, the job prospects of university and college graduates indicate that these categories, together with highly skilled workers, will be subject to less unemployment than those with lower levels of education and training.

Without downplaying the need to produce graduates at high-skill levels in the so-called high-technology areas, I think we must recognize that job access for the great majority of people entering the labour market, including university graduates, is going to mean access to relatively conventional jobs. Put another way, although many people will have to be able to respond to, utilize, and move with the application of new technologies as they are applied to their conventional jobs, not everyone will have to be able to design or develop new technology or technological innovations.

While I must fall back on American data to illustrate this point, let me refer you to a table published in the August 1984 issue of Harper's and taken from *The New Manufacturing: America's Race to Automate*, a report submitted to President Reagan by the Business-Higher Education Forum in June. This table is based on recent projections of the U.S. Bureau of Labor Statistics. It lists the occupations that will produce the greatest number of new jobs by 1990. The first 'high tech' job that appears, computer-systems analyst (139,000 new jobs), is the twenty-third occupation on the list – well below professional nurses (437,000 new jobs), elementary-school teachers (251,000 new jobs), accountants and auditors (221,000 new jobs), and just ahead of physicians (135,000 new jobs). Computer operators (132,000 new jobs) is twenty-seventh on the list, at about the same level as child-care workers.

How best to gain access to employment is going to continue to be a puzzle to the university graduate entering the labour market in the next few years. The coming to market of the leading edge of the baby boom coupled with the higher education levels that arose from increasing accessibility in the late 1960s and 1970s led in that era to gratifying but essentially anomalous career paths for a number of young graduates. With their higher skills and their arrival at the tail end of the rather sparse group of labour-market entrants born in the depression years, they were doubly blessed, and, I suspect, had masked from them the fact that the proportion of above-average career paths is, in the long term, rather invariant. This invariance is especially true for recent entrants to the labour market, now that a fairly strong cohort of well-educated, relatively young people lie ahead of them.

As far back as seven years ago when attending the meetings of the American Association for Higher Education, I recall listening to a paper delivered by a New York insurance-company executive who had studied how the growing number of highly educated, skilled-job entrants was permitting U.S. industry to hire Ph.D.s where it formerly hired M.A.s, M.A.s where it formerly hired B.A.s, etcetera. To my regret I have not seen similar work done in Canada nor must I admit have I attempted to initiate a study of this matter. Having said this, let me add that this does not argue in my mind for reduced accessibility to university or that university graduates will not be more favourably treated by the labour market than their less educated compatriots. It does argue that in many cases new university graduates may have to accept positions that do not initially require the full use of all their developed skills and knowledge, although they may do so with the expectation that their career paths will develop more rapidly and call into play their full talents in the future. (In passing, let me hasten to note that I certainly do not accept the idea that university education is solely or in many cases primarily for vocational purposes.)

The fact that employers may 'over-hire' or 'under-employ' university graduates to begin with, and only later begin to appreciate the adaptability and flexibility that should and I believe usually does accompany the university graduate, is at least hinted at in the *Employment Survey of 1982 Graduates of Ontario Universities* conducted for the Ministry of Colleges and Universities (Ontario 1983). Tables of initial salaries at the time of this survey for different categories of graduates indicate that, while hired initially at lower rates than graduates in the professional areas, graduates in the humanities, education, recreation and leisure, social sciences, and fine and applied arts progressed more rapidly on their career paths. One may argue that they needed to because their salaries initially were so much lower, but I doubt that employers were being charitable in their salary adjustments. However, more work is necessary to flesh out and fully run down this line of reasoning.

To conclude:

1 Because we often use a convenient but not too relevant measure of participation rates, we may have an inaccurate picture of the actual degree of access both to university and to employment.

2 While we must never let up on efforts to ensure an adequate supply of graduates in high-technology areas, we must also recognize that most jobs for university graduates will be in conventional areas.

3 Career patterns for current graduates will not likely be as steeply sloped as many of those of their role models who graduated five to fifteen years ago.

4 Notwithstanding this, the university graduate, along with the college graduate and the highly skilled worker, will be much more likely to realize a high level of employment than those of lesser educational accomplishment.

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Ontario's universities: social elitism or social responsiveness?

Monika Turner

I would like to thank the organizers of this conference for the opportunity to present my organization's views on the question of access to higher education.

Rather than commenting on the specifics of the discussion paper, I would like to make several broad observations that must be considered in any complete discussion of the accessibility of university education. In particular, I will highlight the substantial costs of the so-called tradeoff between high quality university education and universal access to that education, particularly as borne by the traditionally disadvantaged groups in our society. I will also offer my views concerning the quality of our university students today and the need for standardized entrance examinations.

The timing and substance of this conference is not accidental. The organization and sponsorship of this gathering by the Ontario Economic Council is in direct response to the public request of the Commission on the Future Development of Universities of Ontario (Bovey Commission) for reactions and suggestions regarding its work.

Our ailing universities are indeed at a crossroads. I think that the issues lying behind the Bovey Commission's formation should be put directly to the Ontario public. The key issue that must be faced is relatively straightforward: it involves a choice between either a high quality, universally accessible university system that caters to Ontario's economic and social needs, including the need for a highly educated populace in the broadest possible sense, or a small, socially-elitist university system that is out of touch with the genuine needs of Ontario society.

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My preference is for the first option. I am concerned, however, that policy changes in the wind will reverse the beneficial and, in my view, necessary trend towards increased democratization and public availability and accessibility of our universities.

ACCESSIBILITY

Seventeen out of one hundred students who enter Grade 9 now reach university. About twelve of those one hundred Grade-9 entrants graduate from university. In addition, within the last decade increasing numbers of students are studying at university on a part-time basis: in 1982/3, they totalled a little over 35 per cent of all university students in Ontario. And a 1982 Statistics Canada report entitled *Part-Time Degree Students: Tomorrow's Majority?* predicts that by the end of this century, part-time students will outnumber full-time students on our university campuses.

University education is becoming increasingly available to citizens who are outside of the traditional 18- to 24-year-old age cohort. These new students, including women, francophones, and natives, have previously had little opportunity to pursue a university education.

However, at a conference sponsored by the Council of Ministers of Education of Canada two years ago, Dr. Bette Stephenson told us that access to university was far from equal and this situation still holds true today. Work by prominent sociologists such as Anisef et al. (1982) and Larter et al. (1982), shows that much remains to be done to attract capable students from lower-income and ethnic backgrounds to university. I am concerned that these newcomers to our universities, who are clearly capable and able to benefit from the university experience, will lose their opportunity to pursue a university education in the 1990s.

The pursuit of equality

The need for an active policy on accessibility is precisely the conclusion of the recent report prepared for the Ministry by Anisef et al. (1982). The report bluntly asks 'why policymakers, having identified the importance of factors other than money, did not develop educational strategies to reduce social, cultural, and geographic barriers to accessibility' (p. 14). It poses this question within the broad philosophical concern of whether 'our postsecondary educational system [should] attempt to cater to a large number of persons [mass accessibility], or should we be concerned, simply, that any person has the same chance at a small number of postsecondary positions [elitism]?' (p. 80). The report suggests the government's answer as it is indicated in empirical data showing that class disparities in education remained constant through the 1970s. In the report's words, 'in the absence of more comprehensive policies [to overcome social and financial barriers to access] one wonders about the depth of commitment and priority assigned to equality of opportunity by the government' (p. 44).

The Anisef report offers another alternative:

> We believe that there is an especially critical need to re-evaluate accessibility priorities as we enter the increasingly sober 1980s. There is, for instance, a growing trepidation that the gains in equality of educational opportunity, realized in the 1960s and 1970s, will be eroded by the end of the present decade. It is our conviction that *more* rather than less needs to be done to convert postsecondary education from a fantasy to a viable alternative for relatively disadvantaged adolescents in Ontario. (p. iv)

The study, therefore, advances a series of measures and recommendations to combat a period of shrinking numbers of traditional college- and university-aged youths by encouraging groups with historically low university participation rates. This would maintain facilities at full capacity and promote the general social and economic improvement of Ontario society. As the report argues:

> Our view of the effect of such changes [e.g., demographic loss in absolute numbers of persons in the 18 to 24 age group] is that they allow for policies that can have a positive effect on equalizing participation rates. Maintaining physical plants in an era of decreasing numbers of traditional full-time students suggests that policies of increasing participation rates of low-participation groups might be seen as more feasible. (p. 118)

The demand for graduates

In our view, too much emphasis has been placed on the 'hump' or 'valley' of the 18- to 24-year-old population, and too little on the factors affecting participation rates. In light of the Anisef report, we suggest that this attitude takes too pessimistic a view of the future demand for knowledge in Ontario society. Implicit in the weighting of the arguments for and against increasing participation rates is the notion that the thirst for knowledge may begin to dry up. There is nothing to indicate that this will be the case: on the contrary, the experience of human history runs counter to this suggestion. More pertinent to the immediate future is the fact that both the rapid changes in science and technology that are typical of modern industrial society and the ever-increasing exposure of each of us to the complexities of life in the twentieth century point with certainty to an acceleration of the demand for, and need for, ongoing education for as broad a cross-section of Ontario and Canadian society as possible.

Dr. H. Ian Macdonald, former president of York University, echoed this sentiment when he attacked the view that the present funding methods are inappropriate because they reward higher enrolment. He argued that such a view

> ignores the fact that enrolment increases represent a response to those students who deserve an opportunity to attend university and who have met our admission standards. If this country is to fulfill its promise to the 21st century, it will require *more*, not *fewer*, university students, and a higher general level of education. (Macdonald 1983a)

Macdonald provides clear reasons for this point of view:

> Of the three requirements – investment in education, technological innovation, and restructuring of the economy – I believe that the most important function of all is to enhance our human resource capacity by investing more in education . . . Certainly, in Canada, when the oil wells have run dry, our human resources especially in this province, will still be the ultimate source of our capacity to innovate, to adapt, and to improve. There is a great deal of literature and research demonstrating the multiplier effects of expenditure on education and the ultimate returns in economic growth and development. I am surprised that more of this evidence is not adduced when this issue is being discussed publicly. For example, achievement in our universities is an achievement of all of society, not just for students, scholars or administrators within the university. Indeed, there is scarcely one socio-

> economic problem today which our colleges and universities are not uniquely well-equipped to meet. We must help them to continue to meet those needs. (Macdonald 1983b, pp. 8-9)

Rationalization

As outlined in Arthur Smith's background paper in this volume, we learn of the widespread government view that there is scope for improved administrative efficiencies, tighter cost-management decision-making, and at least some measure of specialization and concentration of resources in fields of comparative advantage and centres of excellence.

This is the false promise of 'system rationalization', a 'solution' advocated with increasing vigour by the Ministry of Colleges and Universities and the Ontario Council on University Affairs (OCUA) in recent years. That there is an opportunity for 'doing better jobs with what they've got', especially in a time of growing financial constraint, is the explicit premise of the Bovey Commission as it prepares its final report. That 'rationalization' and the restructuring of our universities is what is needed to cope with the 'sprawl' and even the 'riff-raff' in our universities (that is yet to be documented or substantiated) I might add, is another claim advocated by businessmen such as John Wilson.

Behind these varied approaches, illustrated most clearly in Bercuson et al. (1984), lies the belief that Canadian universities passed through a utopian period in the 1940s and 1950s which must be returned to if they are to be saved from ruin. The 'new' university would take in only the 'best students' and give them the 'best education'. A student elite paying substantially higher tuition would be taught the 'old' disciplines again, by professors lacking tenure and faculty unions.

I strongly disagree with this diagnosis and proposed cure for our seriously underfunded university system.

Our central argument is that the excellence of our universities, as *the* highest priority, cannot be achieved at the expense of mass accessibility. In this sense, we share the concern raised by the Commission on Post-Secondary Education in Ontario (COPSEO) more than a decade ago:

> If social responsiveness in post-secondary education is desirable, quality is essential. If broadening the system means simply watering it down, the aim is futile from the start. It is a question always of relating quantity and quality: to spread opportunities, skills and knowledge – but meaningful opportunities, sound skills, and effectively grasped knowledge . . . . But since words are easily corrupted, we must also indicate what quality in education does not mean. It should not serve as a cover for social elitism of students, faculties, or institutions. (COPSEO 1972, p. 32)

This utopia of the 1950s never was, and reference to it reflects false history and false nostalgia, not reality. The system that was advocated was blatantly sexist and racist, shutting out women, natives, and visible minorities.

The largest single factor in the rise in student numbers over the last two decades has been the immensely increased participation of women in university education. If the proportion of female students was the same now as it was in the 'glorious 1950s', total enrolments across Canada would be more than a third less than they are now. Yet, even at this conference, women speakers and panelists are outnumbered five to one. More, rather than less, still needs to be done.

'Rationalization' is a code-word for continued government cutbacks in funding. Yet since the current concept of 'rationalization' has come into vogue, there appears to be considerable confusion about its actual meaning. This is not surprising given that the term is often used interchangeably with 'planning' or is paired with another term – 'consolidation'. Moreover, as both the OCUA and the Council of Ontario Universities (COU) indicate, 'rationalization' does not constitute a comprehensive, fully developed program, but rather a series of sometimes interrelated measures for dealing with the current situation of underfunding and the prospect of declining enrolments. Essentially, 'rationalization' entails the *contraction* or 'scaling down' of the present university system through the elimination or amalgamation of existing programs, faculties, or campuses classified as 'redundant', and through the rigid control of future program development. Either separately or together, these two processes would be used to create the most major cutback ever contemplated in current levels of academic program offerings.

Instead of effectively responding to the government's fiscal restraint policy, 'rationalization' ratifies this policy and transfers the logic of fiscal restraint to the area of academic programming. As well as adopting this logic, 'rationalization' proposals for the university sector seek to imitate 'rationalization' proposals for the private sector. Under this approach, private-sector notions about cost efficiency that can be achieved through the reduction of duplicate or weak 'product lines' would be applied to the university system. Accordingly, university programs classified as 'unnecessary duplication' would be eliminated or scaled down. By such measures, it is assumed that strong programs are protected and the efficient operation of the system at the least cost is achieved.

It is clear that private-sector assumptions about the positive effects of 'rationalization' would not hold for the present university system. For business, the reduction of competing product lines would be based on clear goals and observable market demand. For education, the reduction or 'rationalization' of competing 'course product lines' would not be based on any knowledge of long-term demand. *Proposals for the 'rationalization' of the university system have not been based on any carefully researched understanding of the educational needs of the next few decades.* Whereas genuine educational planning seeks to reorganize the currently ailing postsecondary system on the basis of future social, economic, or cultural needs, 'rationalization' constitutes an *ad hoc* response to existing and anticipated government underfunding of university education.

Moreover, it is unwise to assume that the 'rationalization' of the university system would result in an efficient delivery of educational services at least cost. The chronic underfunding of the university system precludes its efficient operation.

Student enrolments and student fees

As we followed the Bovey Commission around the province, we began to learn of the consequences of deliberate schemes to 'downscale' Ontario's university system. At their hearing with the Bovey Commission on 7 September 1984, university administrators and their representatives on the COU spoke of the need to cut enrolment by 10 per cent, or by some 20,000 students, if funding did not increase substantially. For example, Doug Wright, president of the University of Waterloo, at that time said he saw only two options for the future:

either 'keep tuition the same [as a proportion of university income], and reduce the intake of students, or maintain accessibility and substantially increase tuition.'

To my mind, these are not reasonable tradeoffs. On the limiting of student enrolment, I share the view of former Quebec Minister of Education, Camille Laurin:

> Let us be clear: it would be one of the worst decisions to be made, a sort of Malthusianism that would risk compromising the cultural, social and economic progress already accomplished and that would menace our collective capacity to participate in recovery and the qualitative changes that will underly it. In a period of crisis like the present, one of the best personal and collective investments that we can make is to yet increase our potential of qualified human resources. Tomorrow, more than ever, we will need many solidly trained citizens – enlightened, creative, versatile, responsible, resourceful, and truly competent. The quality of life flows from this and we know that it is the role of higher education to devote its principal efforts to that end. (Laurin 1982)

Global enrolment reductions will most affect those with the weakest traditions of university attendance. Given John Porter's analysis of education and social mobility in the Canadian mosaic, such a decision to limit enrolment would be socially inequitable.

Does money matter?

On the question of substantially increased tuition, with all due respect I must disagree with the conclusion offered by Dr. Stager that 'financial conditions are not a significant barrier for the great majority of potential students'.

Stager makes the claims several times throughout his work for the Bovey Commission that students make plans early in life regarding postsecondary education, that the majority of students grow up in family environments which condition their response to educational plans, and that 'it is increasingly clear that cultural influences, and not financial needs as such, determine whether students will go on to postsecondary education' (p. 22). Stager would have us believe that personal preferences, educational expectations and motivations, and parental influences are devoid of financial factors.

Similar to the discredited 'cultural deprivation' theories of the 1960s, Stager advocates the position that, when outcomes are not equal, something is deficient in the family or the culture and, therefore, that the system bears no responsibility. By artificially separating the issue of motivation from financial considerations, a distorted picture is portrayed implying that the costs of education are irrelevant to the decision of whether or not to seek higher education.

However, evidence shows that while it is true that decisions are made early in life, these decisions are often financially motivated. Porter, Porter and Blishen (1979) conclude that money matters a great deal:

> Whether the cost of a university education is seen directly as a barrier, or whether its influence is felt easily in a child's school career by determining the subject and program he takes, the fact that university education is expensive must be part of the explanation for the fact that children from lower class levels do not even have as high aspirations as students from higher class levels (p. 77).

In the same study, Porter, Porter, and Blishen report that twice as many high-mental-ability students from low socioeconomic levels expected to work directly after high school as did similar students from higher socioeconomic levels. Anisef et al. (1982, pp. 43, 125) also have illustrated the relationship between the high cost of a university education and socioeconomic status.

A study of 2,700 high-school juniors in the United States (Bishop 1977) concludes that the high cost of education has significant negative effects on attendance, especially on lower- and middle-income people.

Larter et al. (1982, p. 12) also demonstrate the relationship between finances and motivations and expectations. Students are categorized into three groups:

- Group A. Those who felt that they had the ability to go to university and would, in fact, do so.
- Group B. Those who felt that they had the ability to go to university but would probably not attend.
- Group C. Those who felt that they did not have the ability.

Although students in low and medium socioeconomic levels placed more emphasis on education than those in higher socioeconomic levels, only 7.9 per cent of the latter students put themselves into Group B as compared to 51.8 per cent of students in low socioeconomic levels (ibid., p. 39).

The authors also report that Group B students were more concerned with money than were students from the other two groups, that they put money high on the list of factors which influenced their postsecondary planning, and that they were more likely to feel that their families needed a lot of money in order to finance their postsecondary education.

Countless studies in Canada, the United States, and Britain have provided ample evidence illustrating that the school operates in a discriminatory fashion by transferring a disproportionate amount of low-socioeconomic-level and ethnic minority students to 'dead-end' programs that offer the student no rosy economic or educational future. The effects of this discrimination on these students include the development of low expectations, a sense of alienation from the school system, and a decline in educational achievement. To reduce these effects to the simplistic notion that they are simply 'personal preferences and motivations' is to ignore reality.

Effect of tuition increases

I also find little comfort in learning from Dr. Stager's background study for the Bovey Commission that studies more than a decade old finds that a 'ten per cent increase in tuition fees would result in less than a ten per cent decrease in enrolment' (Stager 1984, p. 10) when I know that many of those who would not enrol simply couldn't afford to any longer.

It is not surprising that university administrators are in favour of tuition increases, given the history of underfunding of university education in this province. Tuition is seen to be a reliable source of revenue to the system. The Council of Ontario Universities (COU) stated in its brief on Bill 42 last year that 'if operating grants are not increased, higher tuition fees likely offer the only practical alternative for increasing operating revenue by any significant amount' (COU 1983).

However, to raise tuition fees would be to ignore two key guidelines of the current government regarding tuition-fee policy: (1) that accessibility must be a prime consideration; and (2) that tuition should not be based on program cost or potential future earnings, but rather on access.

Contrary to Stager's remarks, the Ontario Federation of Students (OFS) contends that there is reliable data showing that factors such as tuition costs significantly affect participation.

1 A 1978 research study conducted by the Educational Testing Service (ETS) in Princeton (see Hunka 1979, p. 59) concludes that the results of *ten* different studies showed a significant relationship between costs to students and their probability of attending a postsecondary institution.

2 A 1975 American study conducted by the U.S. National Commission on the Financing of Post-Secondary Education (see Field 1978) concludes that there was a net change of 2 to 4 per cent in enrolment for every percentage change in net price.

3 A 1982 article by Zucker and Nazari-Robati reports on a study that examines tuition trends in fifty American states and shows a negative correlation between tuition and enrolment. The study concludes that lower tuition provides an incentive to students who might not otherwise consider postsecondary education.

Postsecondary education is of more value to society than it is to the individual and, accordingly, there is no rationale for increasing what the individual student must pay.

Our position, expressed in OFS (1980), is still valid today: taken together, the magnitude of fee increases facing students, the ill-conceived policy of allowing institutional autonomy in setting fees, and the lack of any major improvements to the student-aid plan constitute the gravest threat to accessibility that this province's university system has ever faced. The OFS sees the '25 per cent solution' as no solution at all, but an admission of the government's refusal to fund a quality and accessible university system. 'Wise use of the public purse' does not mean abandoning social goals. High tuition would create a 'false' decline in demand, that is, a deliberately scaled-down university system which could not maintain existing enrolment levels.

A student's ability to finance a university or college education should never be a factor in deciding whether or not to go to school.

This position has been shared and strongly promoted by the Ontario government as reflected in the statements of Frost, Allan, Robarts, and Davis on this matter in the late 1950s through the 1960s and into the early 1970s.

These commitments have been buttressed by Canada's international legal obligations under the International Covenant of Economic, Social and Cultural Rights to which Canada acceded in 1976 following agreement by all provinces. Specifically, a clause of Article 13 reads as follows:

> Higher education shall be made equally accessible to all, on the basis of capacity, by every appropriate means, and in particular by the progressive introduction of free education.

Since the mid-seventies, the Ontario government has, through its actions and statements, slowly retreated from its declared policy positions. Further, under continued conditions of government-imposed financial stringency, the majority of Ontario-university executive heads have agreed to proposals that would restrict enrolment and access to university.

We cannot support any action that would restrict access to university. Those who contribute most to society are not always in the highest groups in terms of academic achievement. Even increasing admission standards, as was done recently, could very well exclude a large number of people who might be future leaders and major contributors to society. Universal accessibility to postsecondary education should be seen as central to one of the essential tenets of the Canadian nation: namely, that no one should be fixed or limited in terms of individual accomplishment, and that social class or background should not inhibit the opening of new doors and the broadening of horizons.

Policy needs

It is the belief of the OFS that university and college education in Ontario and throughout Canada exists to serve the needs of the majority of the Canadian people and, therefore, should be organized to meet those needs. University education in Ontario should not exist to serve the partial interest of any elite. Higher education is subsidized by the people of Canada and thus must belong to the people of Canada.

The maintenance of access requires at least three different types of policy:

1 Policies directed towards the removal of financial barriers to access in accordance with our international obligations under the 1976 International Covenant on Economic, Social and Cultural Rights;

2 Policies directed towards the reduction of systematic under-representation of various groups; and

3 Policies directed towards ensuring that the basic capacity exists to meet demand for postsecondary education.

Remarkably, it appears that this third condition no longer exists in this province. Despite the efforts of university administrators to trivialize the results of the recent survey (Davis 1984) of September 1983 applicants to university, I am concerned that 1,100 qualified applicants did not find a place in university, and that some 700 qualified applicants could not accept an offer of admission for financial reasons.

The benefits of university education will minimize the effect of some sociocultural impediments, although some will still require a protracted educational effort in conjunction with new and innovative social policies. Remarkably, the Ministry has yet to publicly respond to the methodology, findings, and recommendations of the 1982 Anisef study, a study that suggested a positive strategy for attracting more students from groups that are now under-represented in the university system as well as a public system for monitoring accessibility.

Finally, I do not accept the proposition being advocated loudly in some quarters that universities are full of incompetent students who are wasting public resources. While anecdotes abound, I have not seen a comprehensive, system-wide analysis of the deficiencies of our present university undergraduates. The evidence I have seen suggests the opposite: the *Interface* study of the mid-1970s (Ontario 1977) suggested that there was 'strong evidence that the group of students passing through the interface between secondary and post-secondary studies is as well-educated and as well-prepared in basic skills as were similar groups in Ontario in the past, and as are comparable groups of students in other countries' (pp. 129-30). The report added the warning that 'there is no golden era of the past'. In this regard, the study noted the 65 per cent failure rate of students who had undertaken a basic examination of English in 1950 at the University of Toronto.

A LOOK AT STANDARDIZED TESTING

I am also not convinced of the value of the reintroduction of province-wide examinations for entrance to university. The issue of standardized testing is one which generally promotes heated reactions among both its opponents and supporters. Avid opponents of the method have called testing a strait-jacket on the minds of young people and a form of cultural genocide against minorities. It has been the subject of lawsuits in the United States and has resulted in court-ordered change; in 1972, the powerful U.S. National Education Asssociation (NEA) called for a moratorium on standardized testing.

Much of the opposition to standardized testing is due to the perceived inherent biases in the method itself. Functioning as a method of evaluation, selection, and restriction, testing has been accused of being both culturally and socioeconomically biased as well as an inadequate measure of a person's ability or aptitude.

Standardized testing also causes teachers to teach for such tests. That is, in the language of the industry, they begin to develop 'testwiseness' among their students. This encourages convergent, rather than creative, thinking. The predominant form of such tests (multiple-choice questions) penalizes the deep student, dampens creativity, fosters intellectual dishonesty, and undermines the very foundations of the learning and reasoning process.

Arnold Ages, a faculty member at the University of Waterloo, recently called 'objective' testing one of the greatest misnomers in the English lexicon:

> The problem is that multiple choice means minimal chance to anyone who does not know the proper techniques to be used in taking the tests. The reason is that the tests in question evaluate not knowledge, intelligence nor mastery of a given discipline, but the ability on the part of the examinee to make deductions and choose between nuances. . . . The student is required to process information and then reproduce it by smudging a black space. He has no opportunity to work out in a coherent fashion the steps that he took in making the

> discrimination that led him to the right answer. (Ages 1983, p. 11)

A former colleague of Albert Einstein, Banesh Hoffman, was completely in accordance with this view and stated:

> I would like to see any type of testing that allows the student to do something himself, in which the concern is not just with the answer, or with the choice, but with the reasoning process used to arrive at the answer. That is what teachers must be concerned with. (see Houts 1977, p. 202)

The idea that it is possible to measure ability or aptitude through this process in either mathematics or language has also been challenged. Mitchell Lazarus, producer of an American-television, educational-mathematics series has said:

> No test can examine 'mathematics' or 'reading' or any other subject area in general; a test can only sample particular content within the subject matter. Thus, each test becomes a statement about what content the test-maker thinks is important enough to sample. This is a matter of judgement and sometimes the judgements are questionable. (Lazarus 1977, p. 192)

Professor of Engineering Science and Education at the Massachusetts Institute of Technology, Judah L. Schwartz, has also expressed opposition to standardized testing in mathematics:

> The partition of mathematics into computation, concepts and problem-solving is a relatively unthoughtful breakdown of a very complex competence, one that serves neither the child nor the subject matter very well. Within this division, mediocre items probe superficial foundations of mathematical skills and little is learned about what is undoubtedly the object of the whole exercise: the child's ability to manipulate the symbolic representation, and make inferences about the real world from symbolic representation. (Schwartz 1977, p. 282)

In January 1981, the U.S. *Peabody Journal of Education* devoted an entire issue to the problem of testing. It summarized the general criticisms of standardized testing in the following way – the process of the testing is dehumanizing and demeaning; students are reduced to numbers and are forced by test-makers to fall into an arbitrary, bell-shaped curve; tests do not measure traits such as creativity, motivation, honesty, or perseverance, and results are misused and assigned too much weight.

The Toronto Board of Education also contends that tests are misused and disagrees that a single standardized test can be used to evaluate success, for it maintains that a test average is a poor indicator of success. According to the Language Study Centre, averages that cover only what is taught are misleading indicators of success (Toronto 1977).

Standardized test results can determine some of the most significant events in people's lives. However, their validity and reliability are questionable. They can be a dangerous barrier to achieving equality of educational opportunity. Howard Russell of OISE has stated (1983) that all one gets for using such external exams is the privilege of paying for them.

I hope I have offered some thoughts that will aid our deliberations over the next two days. It is my firm conviction that the interests of Ontario students as I have presented them, and the interests of Ontario society at large, are in the maintenance of a high quality and universally accessible university system in Ontario. Our future depends on it.

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The colleges of applied arts and technology: a viable alternative to university

Alan King

This paper is primarily an analysis of the present and future role of colleges of applied arts and technology (CAATS) in the vocational preparation of students and an exploration of factors influencing the relationship between CAATS and Ontario universities. On-the-job training is briefly reviewed as an alternative delivery system for vocational preparation.

The paper begins with an overview of the historical development of the colleges, highlighting their growth patterns, innovative programming, and relationship with government. This is followed by a discussion of what appear to be the most important issues currently facing the colleges. It is important to note, however, that the colleges' relationship with universities is not one of these issues. The colleges have carved out their own special segment of the formal education/training system and are not threatened by university vocational programming. Nor are they particularly concerned, at this time, about the problems that beset the universities.

On-the-job training is only given brief coverage in this paper because there is little evidence that industry is willing or able to take a major responsibility in long-term skills training at the present time or in the near future.

There have been a few instances over the past years where universities and colleges have found cause to collaborate. I note some of these and conclude with some suggestions as to future directions in this regard.

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DEVELOPMENT OF THE CAATS

Factors influencing the establishment of the CAATS[1]

W.G. Fleming argues that the basic influence leading to the broader scope of Ontario postsecondary education that is represented by the establishment of the CAATs has been the growing complexity of the economy (Fleming 1971, p. 491). The transformation of urban life caused by new technologies in business and industry has emphasized the inadequacies of traditional types and levels of vocational preparation. A strong feeling developed among politicians and educators that vocational skills alone were not sufficient for this new age, and that it was necessary to begin to focus on developing career adaptability. Many thought that this could be best accomplished in postsecondary-education institutions that combined general education with specialized vocational preparation. To obtain clients for such institutions, a required first step was to make the completion of secondary-school education a normal practice for the majority of Ontario students. This goal was effectively accomplished by the end of the 1960s. Further, the availability of federal funds during those years made it possible to expand the secondary school's vocationally-oriented facilities and the Reorganized Secondary School Program, introduced in 1962 by John Robarts, provided the necessary direction.

A great variety of postsecondary-education institutions was introduced in the 1960s, including an expanded university system. There was concern about access to university during the rapid-growth period, but every year it was announced that every qualified candidate had been able to gain admission. However, it was clear that alternative, less costly, and more vocationally-oriented institutions were still required.

Ontario vocational centres were established by the early 1960s at a number of strategic locations, but it was feared that these organizations would be too narrow in program emphasis to produce the desired career adaptability in their students. A number of alternative structures were considered, and two models received the most attention. One, typically represented by the United States' junior colleges, was that of a university-preparatory system; this approach was essentially an inexpensive way for young people to obtain one- or two-years' credit toward a university degree. The second alternative was that of a true community college that would focus on the delivery of vocational programs quite specific to regional needs. Lethbridge Junior College pioneered this concept in Canada; it was established in 1949 in great part because of the efforts of the local citizenry. The Vancouver School Board initiated a similar type of junior-college program with the opening of Vancouver City College. It anticipated the CAATs' structure by requiring that every diploma program include a core of basic education as well as vocational preparation in a special field.

With a university preparatory year – Grade 13 – already established in Ontario, colleges in this province were free to offer a form of programming clearly different from that offered in the universities. On 21 May 1965, the Minister of Education, William Davis, introduced Bill 153, an amendment of the Department of Education Act that made possible the establishment of such colleges when it was passed the following month. On that occasion, Mr. Davis emphasized the importance of providing more young people with an ability to cope with technological change. He referred to three relevant issues: first, a knowledge explosion that created higher educational expectations for all; second, a technological revolution that was beginning to eliminate many skilled and unskilled jobs and increase the need for individuals who were both highly skilled and adaptable; and third, a population explosion that increased the proportion of young people available to the labour market. He went on to state:

> Now, having put in train our plans for other areas of our school system, we must and can focus our attention on the design of this remaining section, directly related to the applied arts and technology, for full-time and for part-time students, in day and in evening courses, and planned to meet the relevant needs of all adults within a community, at all socio-economic levels, of all kinds of interests and aptitudes, and at all stages of educational achievement. Our efforts here could, I suppose, be considered also as a co-ordination and culmination of all previous work in this area; a welding into a coherent whole, so to speak, of the parts which have sometimes seemed fragmented . . . so that we have a complete system extending from the kindergarten to the post-graduate level. (Fleming 1971, p. 507)

Although Mr. Davis was forced to stress again and again that the colleges were not to be university-transfer institutions, he also believed that no able and qualified student should be prevented from moving from a college to a university. His perception of the programs of the colleges was as follows:

> we have in mind composite or comprehensive institutions, preferably with several buildings on the same campus, providing a wide variety of programmes of varying length, including work-experience programmes, by day and in the evening, for adults as well as for youth, and for probably more part-time than full-time students. (Minister's Task Force on College Growth 1981, p. 7)

The function of such institutions, therefore, was to offer instruction for full- or part-time students in all of vocational, technological, general, and recreational education and training.

The first steps taken in 1965 to establish the colleges were quite slow despite the pressure to get them operating as quickly as possible. Further planning was thought necessary. However, the Reorganized Secondary School Program would produce its first four-year graduates in 1966, and many educational critics also were arguing that there would be no postsecondary-education opportunities available for them at that time. In addition, a federal-provincial survey of skilled-manpower requirements released in 1965 had indicated that there were skilled-labour shortages in all areas of the province and in almost every occupational category. The pressure for immediate action finally won over, and the Centennial, Lambton, and Algonquin colleges of applied arts and technology were able to get programs in place for the fall of 1966. Their beginnings were slapdash and confusing, but within six months all appeared to be successfully underway.

The mandate

The provincial government's broad mandate in establishing the CAATs is described in the *Basic Documents* (Ontario 1967). It is possible to identify three primary objectives within it: first, that all CAATs should serve the needs of their communities; second, that they should meet the needs of the labour market by providing well-qualified manpower; and third, that they should provide some form of postsecondary education to those nonuniversity-bound students capable of benefiting from it.

Such a mandate carries with it the seed of potential conflict in college priorities. As long as the system retains high-growth patterns and has ample funding, no major decisions are required that favour one client group over another. Recently, however, it has become quite clear that priorities must be established vis-à-vis different client groups, community and provincial needs, and the congruence of labour-market requirements with students' program choices. Although the original mandate has not been formally revised, there now have been numerous clarifying memoranda from the Ministry of Colleges and Universities. One of the most contentious of them relates to the elimination of the priority status given to applicants from within each college's catchment area.

Structure of the CAATs

The college system that was put into place was truly a massive undertaking. Twenty-two multi-campus colleges were established, enabling virtually every young person in Ontario to attend a college in his/her home community.

Reflecting the autonomy given to the CAATs by the system's Council of Regents, there is considerable variety in the organizational structure of the colleges as well as in the terminology used to identify the organizational components and administrators. A typical structure of a college might consist of four main postsecondary units, divisions, or schools – applied arts, business, health sciences, and technology – but there are many exceptions, largely due to the creation of additional schools or divisions in such areas as computer studies. There is often also an additional unit focusing on the nonpostsecondary programs that traditionally have been funded by the federal government, including upgrading, retraining, and apprenticeship programs. In addition, most colleges offer a general-arts program for students who are unclear about future goals. For the most part, however, all programs are occupation-specific. There is a tremendous variety in the occupations covered; Humber College, for example, offers 123 programs ranging from travel and tourism through to microcomputer business applications.

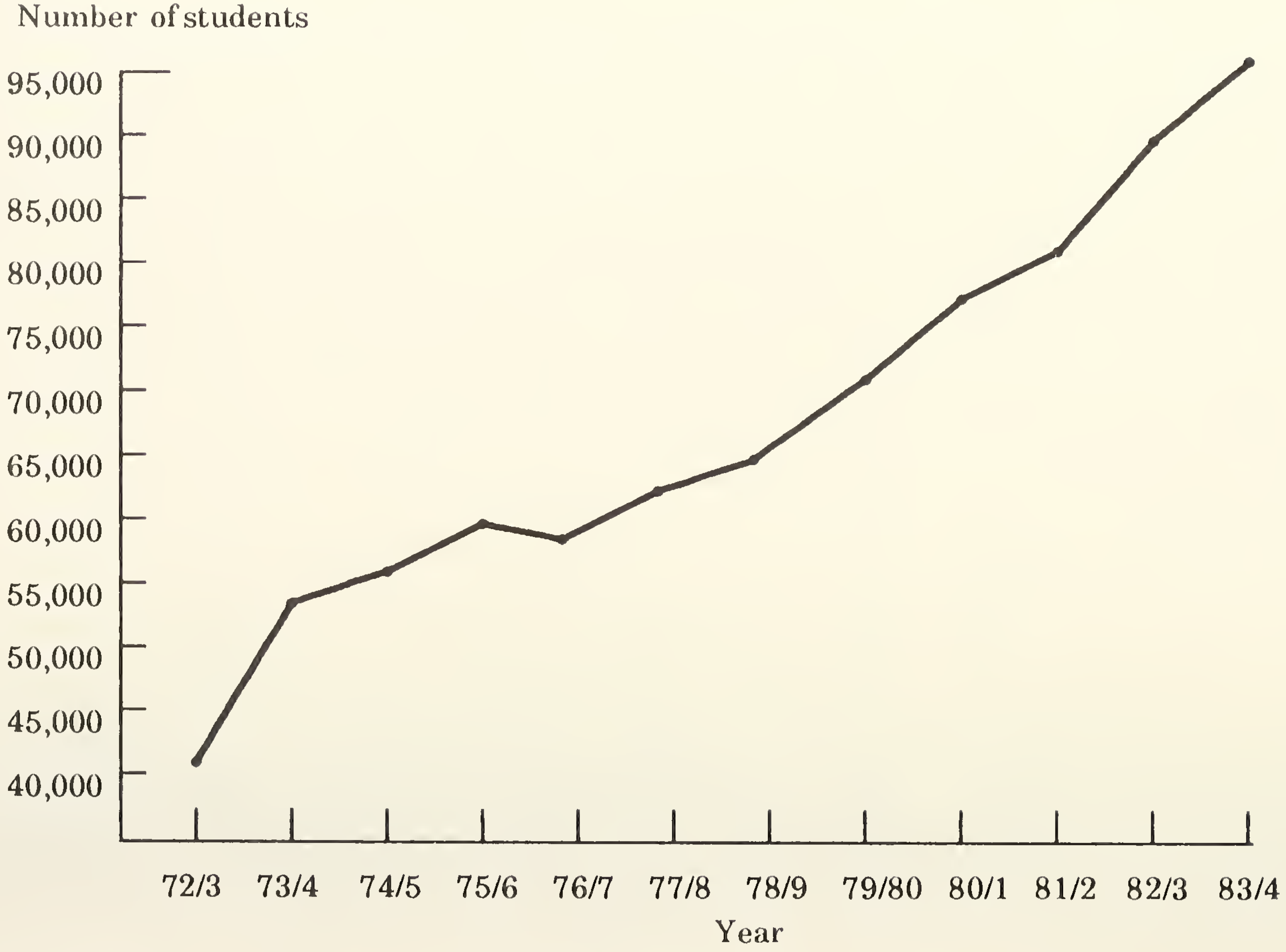
Growth of the CAATs

The dramatic growth of enrolments in the colleges from 1972/3 to 1983/4 illustrated in Figure 1 indicates the increasing acceptance of college programs by secondary-school graduates. In fact, enrolments have increased over the past few years even though the pool of graduates has remained essentially stable. The high placement figures for graduates in the 1970s has been a remarkable phenomenon, and indicates increasing recognition by both the public and private sector of the quality of the college programs. Ontario-university enrolments for the same period have also risen, but not nearly so sharply as for the colleges. From 1980 to 1984, first-year postsecondary-program enrolments in the colleges increased by 20 per cent while those in the universities increased by only 11 per cent. Currently, the number of students enrolled in first-year programs in both types of institutions is very similar. Since a decline in overall enrolments in the postsecondary sector is inevitable in the near future and since a significant number of Grade-13 graduates are drawn to the colleges, a direct competition could thus evolve between these institutions.

Also promoting a growth in enrolments for the CAATs might be, somewhat ironically, the sharp increase evident in the last two years in the proportion of students remaining in secondary school for a fourth and fifth year. Some researchers have assumed that this will translate into a significantly increased university participation rate. However, our research indicates that the increase in secondary-school enrolments is made up in great part of low-achieving students who will not be academically qualified applicants for university. The proportion of students eligible for university entrance will increase, but at a lower level than anticipated. On the other hand, the proportion of students eligible for entry to college programs will increase in a pattern more consistent with the increased secondary-school enrolments.[2]

Figure 2 presents college enrolments by college division from 1972 to 1982. Note that within the health-sciences division, nursing comprises the vast majority of enrolments, and the enrolment decline in the late 1970s corresponds to the decline in the employment opportunities in this profession. Applied-arts enrolments do not change significantly over this period, but rapid growth in the business and technology divisions clearly indicates the strength of the demand in

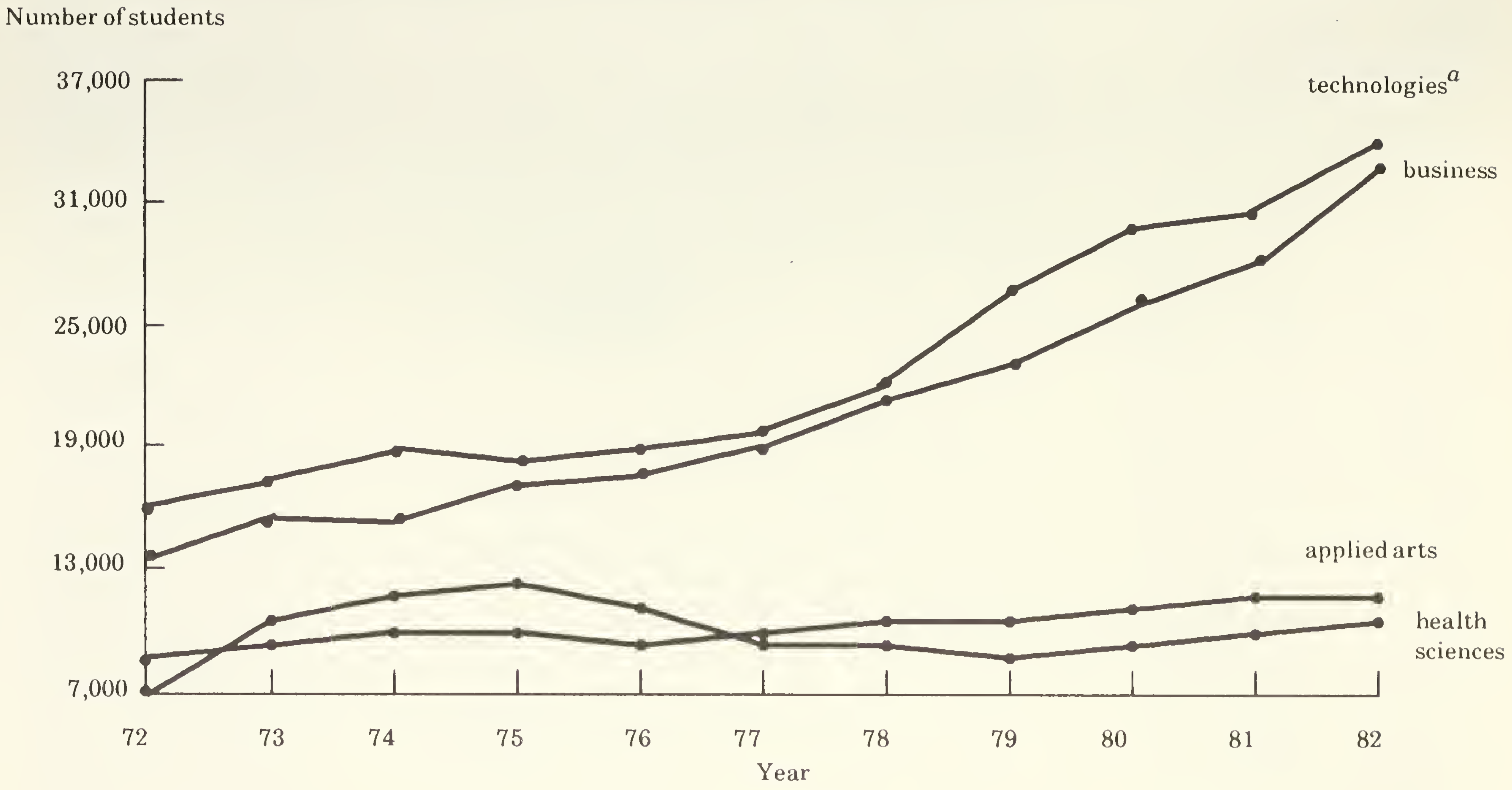
FIGURE 1
Enrolments in postsecondary programs of colleges of applied arts and technology, 1972/3-1983/4



SOURCES: 1983/4 figures were obtained by author from an official in the Ministry of Colleges and Universities.
Statistics Canada, cat.nos. 81-229, 81-222, various years.

FIGURE 2

Enrolments in postsecondary programs of colleges of applied arts and technology by division, 1972-1982



a natural resources, community and social services, and engineering divisions are included in technologies.
SOURCE: Statistics Canada, Cats. 81-229, 81-222, various years.

these areas. As is readily apparent here, growth in college programs is closely related to the demand in particular vocational fields and is subject to dramatic swings. Consequently, long-term planning has proven to be quite difficult and has forced very stressful staffing decisions.

The colleges' client pool is not fully tapped at the present time, and there is potential for future growth through active recruiting, especially if the poor state of the economy persists. Should the economy improve, however, we can expect a significant decline in overall college enrolments as more jobs become available.

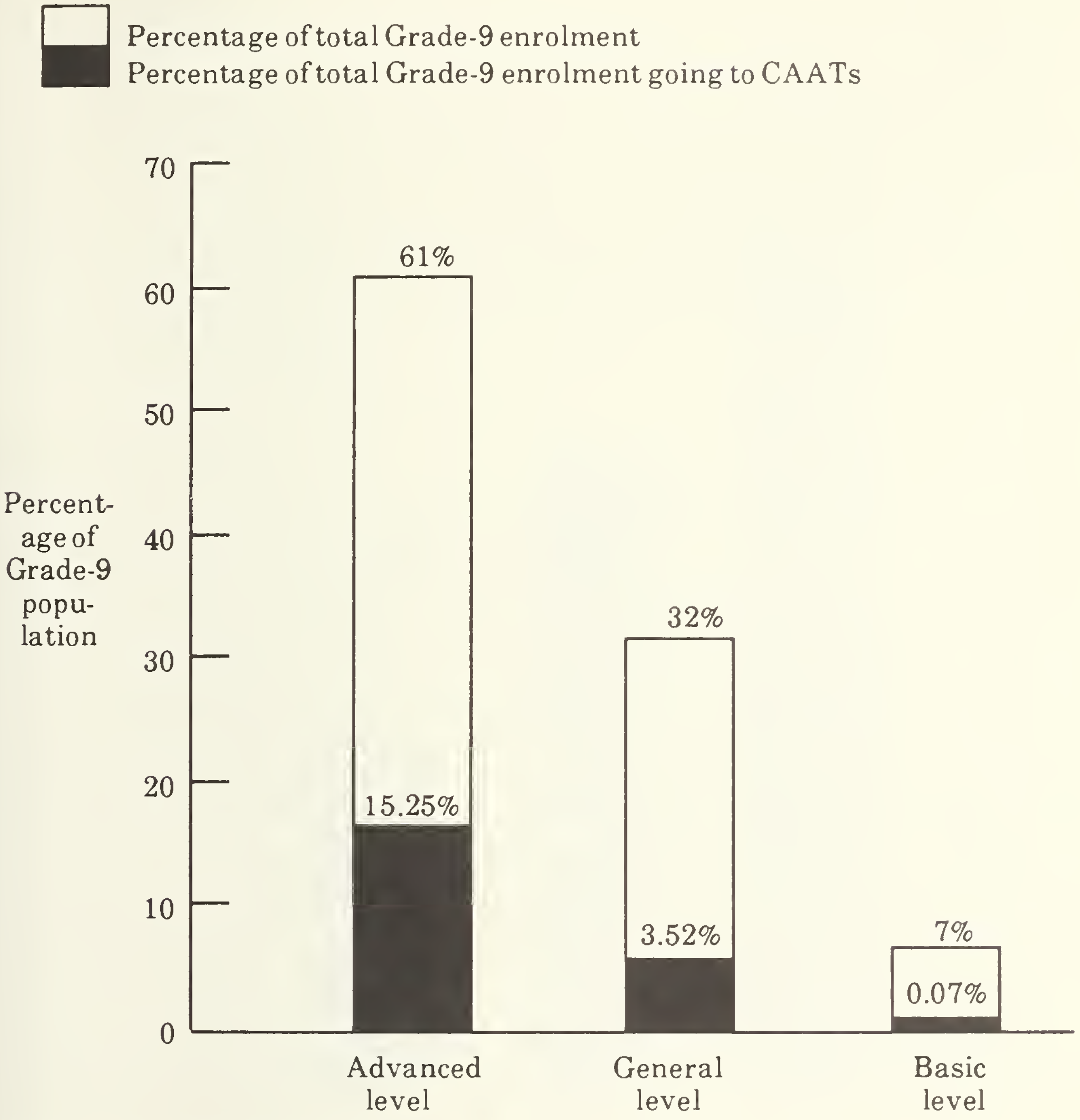
Clients of the CAATs[3]

For many years, educators have been concerned that the colleges have been increasingly denying access to the target group for which they were originally intended – that is, the graduates of four-year secondary-school programs (now identified as graduates who have taken mainly general-level courses). However, there are no specific references in the act and regulations governing the establishment of the colleges as to the provision of opportunities for Grade-12 graduates of four-year programs. The act and regulations only distinguish between grade-12 and grade-13 graduates who are to be admitted to an 'appropriate' program of instruction. The government appears to have intended an open-door policy for college admissions with the basic qualification for entrance being the Secondary School Graduation Diploma (SSGD). Selective admission practices have been discouraged, as evidenced by an absence of differentiation between advanced- and general-level credits. However, the government has never consolidated its admissions-policy statements. This has in effect resulted in conflicting policy statements and a wide degree of latitude in interpretation by the colleges.

There are substantial variations in admission requirements from college to college for certain programs, and these typically take the form of requirements beyond a basic Grade-12 diploma. Also, the colleges often differ in their admissions procedures, including in the use of interviews, tests, and random selection.

Figure 3 indicates the percentage of students from what might be termed the three main secondary-school streams (classified in terms of majority of courses taken at advanced, general, and basic levels of difficulty) who attend an Ontario CAAT. These figures are based on

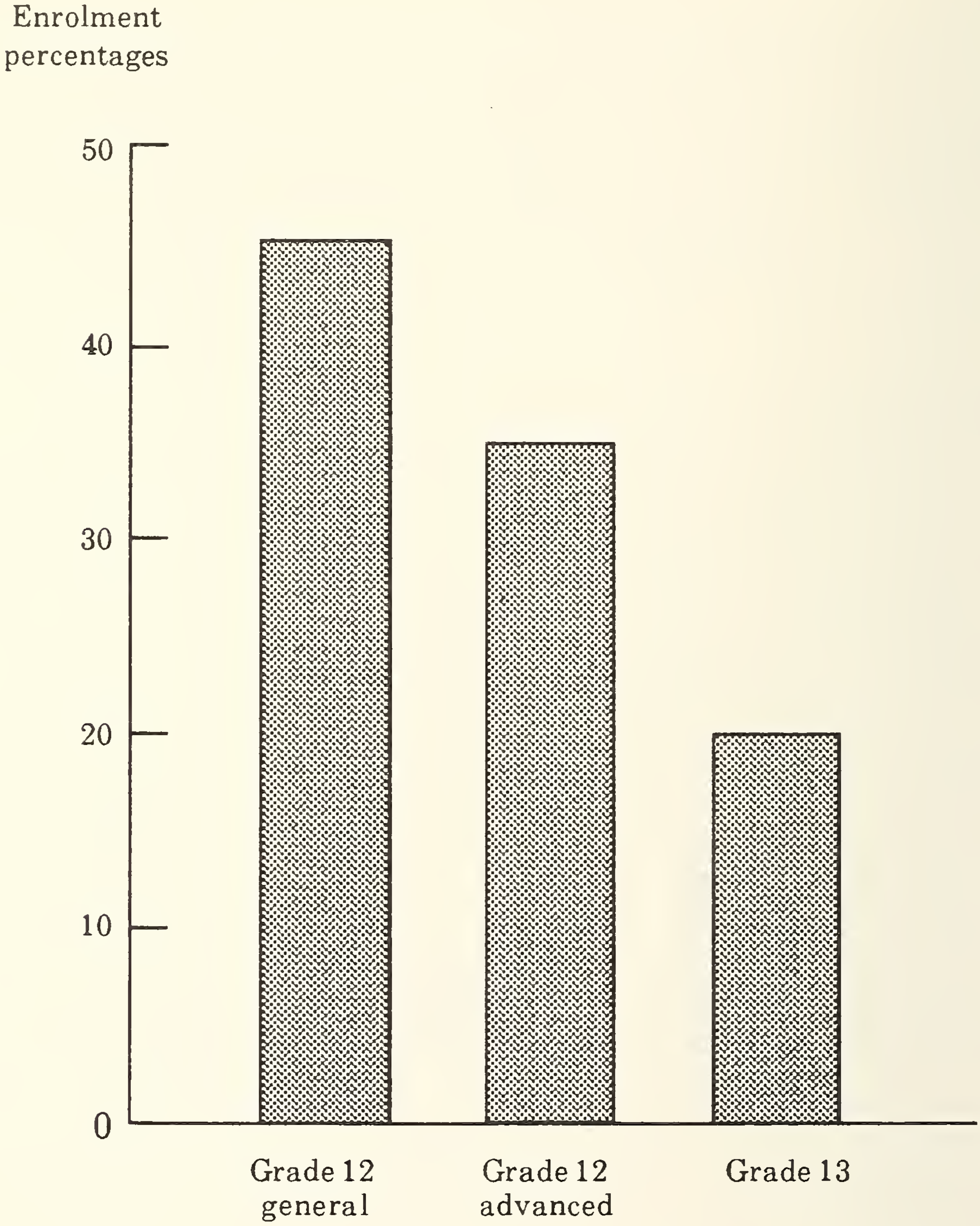
FIGURE 3
Enrolments in colleges of applied arts and technology, postsecondary programs, by Grade-9 educational background of enrollees



SOURCE: King and Hughes (1984).

Grade-9 enrolments. They indicate that the vast majority of students entering the colleges were taking advanced-level courses when enrolled in Grade 9. Figure 4 also classifies college postsecondary-program enrollees on the basis of their educational background, but differs from Figure 3 in that the last year of secondary school is used to classify the students. It indicates that, a number of students who began secondary school taking mainly advanced-level courses had switched by Grade 12 to general-level courses. Nevertheless, if one

FIGURE 4
Enrolments in first year of postsecondary programs of colleges of applied arts and technology by educational background of students



SOURCE: King (1983), p. 19.

combines both Grade-12-advanced and Grade-13 graduates, it can be seen that the majority of enrollees have taken mainly advanced-level courses by the time of secondary-school leaving. The percentage of Grade-13 graduates entering a CAAT has remained quite stable over the past six years, and, perhaps surprisingly, the percentage of college students with a Grade-12, general-level background has increased.

While they are more likely to be found in one-year programs and less likely to be found in three-year programs, they are noticeably present in programs of all duration.

The variability in admission requirements from college to college raises questions regarding equality of opportunity for students with similar educational backgrounds. The educational background of incoming students across colleges differs substantially, since some colleges are more likely to enrol Grade-13 students than others (in 1980, ranging from 34.4 per cent in Fanshawe College to 9.9 per cent in Confederation College). The main reason for differences in admission requirements appears to be the desire for some colleges to attract better-qualified students.

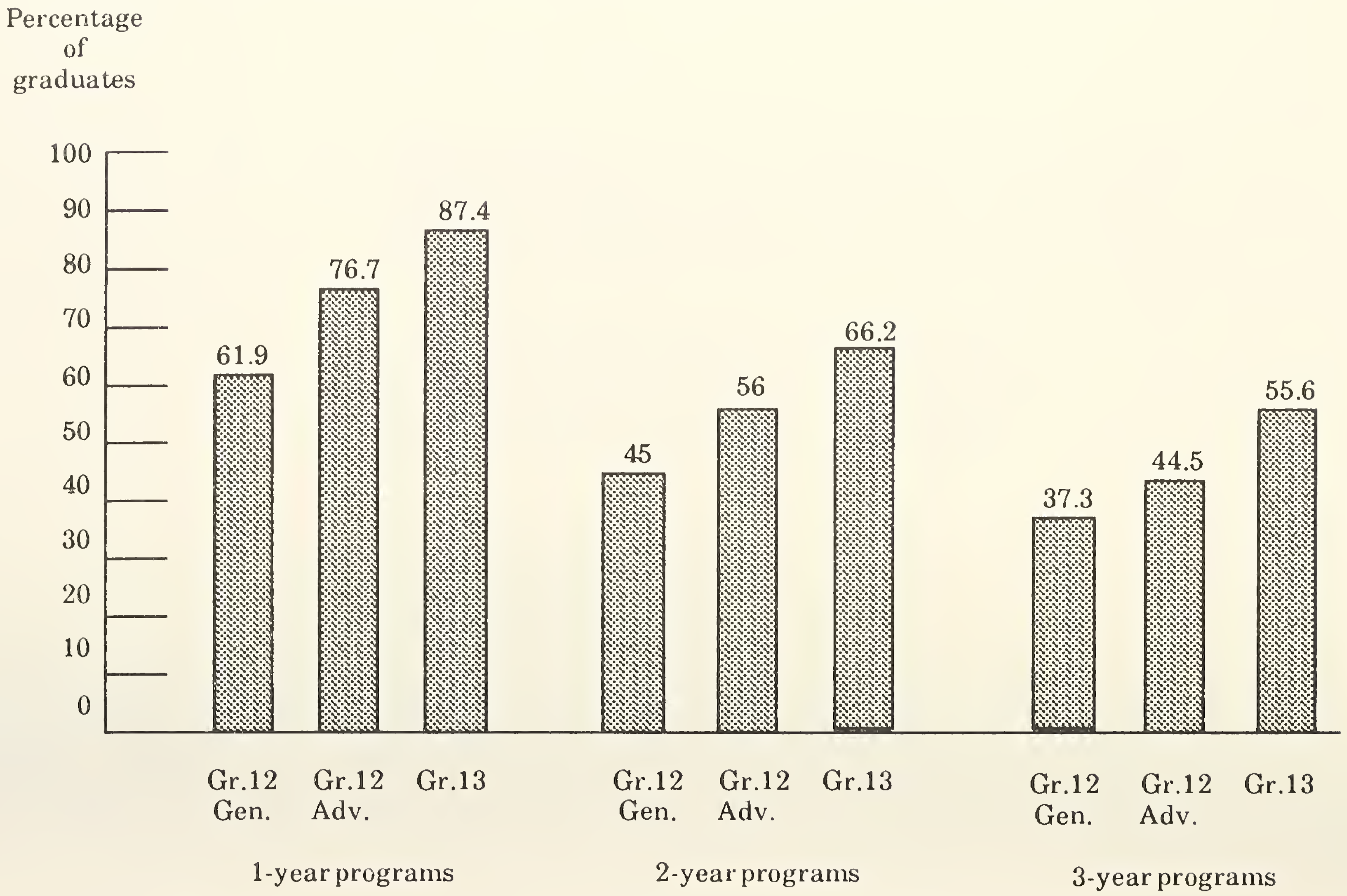
Student achievement

Over the past seven or eight years, graduation rates in Ontario CAATs have remained relatively stable. Over two-thirds of the students enrolled in one-year programs graduate (see Stoll and Scarff 1983, p. 51). Approximately 56 per cent of the students in two-year programs graduate and 46 per cent in three-year programs. Figure 5 illustrates the difference in graduation rates based on the three broad categories of enrollees' education background noted earlier. Clearly, the Grade-13 graduate has a far greater chance of completing a program than the Grade-12 graduate. In addition, students enrolled in health-science programs are far more likely to complete their programs than those in other fields. Technology students are most likely to withdraw, followed by business and applied-arts students. These graduation rates compare favourably with figures from junior colleges in the United States and do not look out of place beside Ontario-university figures.

Responsiveness of the CAATs

The colleges are new institutions, and typical of all institutions established in the late 1960s and early 1970s, they were strongly influenced by social concerns related to the meeting of individual student needs. They were pioneers in the development of individualized learning programs and were quick to adapt the computer to this purpose. Because they were staffed by instructors from industry as well as from educational institutions, they developed a strong entre-

FIGURE 5
CAAT postsecondary-program graduation rates by program duration and educational background of enrollees



SOURCE: King (1983), adapted from Table 6, p. 13.

preneurial orientation. This was reflected in numerous new program initiatives. In 1975, 90 programs were approved, and even in 1980 a further 50 new programs were approved. The CAATs were quick to take advantage of federal funding and to work closely with industry in a variety of informal ways as well as via the Training in Business and Industry (TIBI) programs. Not all the initiatives were successful, and there was a tendency to reorganize periodically – a phenomenon that created tension in the system. Notwithstanding this tendency to incorporate the latest educational trend, the great responsiveness of the colleges to the need for program viability has made them extremely successful institutions.

CURRENT ISSUES IN THE CAATS[4]

In this section, we identify some of the major concerns of the CAATs and indicate the direction in which the colleges are moving. The threat of declining enrolments cuts across each of the issues and represents the greatest challenge to the colleges in the near future.

Access to colleges

Over the past three years, there has been a sharp increase in enrolments in the colleges in spite of a leveling-off of the pool of clients. As a result, the majority of programs are now oversubscribed and in many instances students are required to go through a second level of screening over and above minimum-entry requirements. Many students now cannot take the program of their choice in the college located in their region even though they have met the minimum requirements for program entry. Clearly, political decisions regarding access have been made and seem to reflect, for the most part, employment opportunities for program graduates. This type of program rationalization is much easier to justify in colleges than in universities, and it should simplify the decision-making process in an ensuing period of declining enrolments.

Since there has been no clear direction over time from the Ministry of Colleges and Universities regarding admissions policy, access to programs varies depending on individual college requirements that often seem to contradict one another:

> One group of college calendars demands significant additional academic requirements in an apparent effort to get the best students. The extension of this approach presumes that these students will succeed better at college, and will be more attractive commodities on the labour market. Proponents of this approach also maintain that one of its significant advantages is that tax dollars are more effectively spent.
>
> On the other hand, another group of calendars makes no additional requirements in an apparent effort to give all students meeting basic requirements an equal chance for admission. This, of course, reflects the second objective of the system which was evident from the time of the Basic Documents. (Ontario 1981, pp. 107-8)

If the likelihood of program success is accepted as the major criterion for admission, then secondary-school achievement based on marks and level of difficulty of courses should be the determining factor. It would be more cost-effective (in both social and economic terms) than the present approach.

Autonomy

Since their inception, the colleges have attempted to maintain a substantial amount of autonomy in all aspects of college life. In fact, it could be argued that the Committee of Presidents meets together to maximize this autonomy by acting collectively against government-initiated directives for centralization. Unlike the universities, the colleges regularly receive Ministry memoranda with specific policy directives. As might be expected, there is often an element of confrontation in the relationship between the colleges and the provincial government that is many times only compounded by the large size of the government infrastructure designed to support the colleges.

After undertaking a review of college calendars,[5] it is quite clear to me that a trend toward more common programming and policy has taken place. Recent calendars are far more likely to refer to government policies and have more similar formats than earlier ones.

However, there is also a tendency for the colleges to compete with each other for students. Since the colleges in Metropolitan Toronto tend to be more attractive to students, other colleges with greater potential for declining enrolments regularly come together to develop joint strategies to counteract this tendency. This pattern establishes mutual-interest blocs and further, it works to undercut individual college autonomy.

Provincial unionization of faculty and support staff is another factor influencing autonomy. Unionization forces colleges to negotiate collectively in league with the Council of Regents, often making college staff feel that they are members of one large government bureaucracy and dividing college administration from their own faculty.

Overall, the balancing of local and provincial forces presents a real dilemma for college administrators in their eforts to achieve a high level of autonomy.

Federal-government funding

The colleges' upgrading, retraining, and apprenticeship programs suffer from a lack of stability and status. This is related to three main factors: first, the programs tend to be of short duration with varying entry and exit points; second, because many of these programs have less stringent entry requirements than postsecondary programs, they have less prestige; and third, most are funded by short-term federal grants that vary with the economic and political climate. Even the two per cent of postsecondary-program students who are funded through federal-government initiatives are often set apart.

The National Training Act (Bill C-115: an act to establish a national program for occupational training), passed in 1982, enables provincial governments to enter into longer-term training agreements with the federal government. As well, training periods of greater than 52 weeks are permitted and funds are made available for facilities and equipment. This Ontario/federal-government agreement should help to overcome the program-stability problem through facilitating long-term planning. The status issue would be improved by less physical and organizational separation.

Federal funding has come to the colleges through a variety of training programs. A short list of them should be sufficient to indicate the administrative challenge they represent: Basic Training for Skill Development (BTSD), English as a Second Language (ESL), Basic Job Readiness Training (BJRT), and Critical Trade Skills Training (CTST). Although these programs were instituted at different times in response to different political pressures, they would be far better delivered if packaged under one broad programmatic theme.

One additional problem is that federal funding targeted at special groups, e.g., native peoples or minorities, can make programs appear discriminatory to some Ontario communities if these groups are not present in the same proportions in each college region.

Impact of 'OS:IS'

The programs and organization of Ontario's secondary schools will undergo major change beginning this fall in response to a Ministry of Education document entitled *Ontario Schools: Intermediate and Senior Division* (OS:IS – Grades 7-12, OACs). Only one diploma will be granted and it will require 30 course credits, 16 of which will be compulsory. This is substantially more than the previous four-year diploma (27 credits with 9 of them compulsory). If students continue to obtain credits at the current rate, more students will either leave before completing the diploma or remain an extra year (probably both will occur). This situation will likely reduce the client pool for the colleges and change the patterns of course selection.

OS:IS creates the possibility of a major shift in the normal number of years taken by secondary-school students to complete university-entrance requirements – a shift from five years to four. Since many secondary schools have chosen to facilitate the achievement of 30 credits in four years and the majority of students appear inclined to select this route, there will be a double cohort. This bubble effect may be spread over two or three years, but it must not be ignored by the universities. Further, at the present time, the CAATs attract a mix of students who spend four, five, and even six years in secondary school prior to entering a college program. With the increased requirements to obtain a secondary-school graduation diploma as stated in *OS:IS* (the number of prescribed courses increasing from 9 to 16 and the total number of courses required increasing from 27 to 30), there could very well be a lag effect; that is, for at least one year there could be fewer students eligible for entry to the colleges.

Today, effective instruction in the colleges is hampered by the heterogeneous educational background of enrollees. Along with the implementation of *OS:IS*, efforts are currently underway to effect greater commonality of student courses at entry to college. Therefore, as a result of *OS:IS*, the colleges may attract fewer but better prepared applicants.

ON-THE-JOB-TRAINING[6]

Many Canadian firms have a long tradition of developing and implementing their own training programs. The large automotive companies, such as General Motors with its training programs in automotive sales and service, represent good examples. In addition, IBM and Xerox have their own training institutions as well as portable training programs in such areas as management and new-product repair. Many financial institutions have come together to establish their own training consortiums that both co-ordinate and deliver specific certificate programs. This would all seem to indicate that Canada has a strong tradition of on-the-job training that merely needs to be expanded to improve the quality of the workforce. Unfortunately, however, the programs I have noted represent the exceptions. We in fact do not have a sound tradition of on-the-job training in this country, nor do we have a good basis on which to build on-the-job training schemes.

Harvey (1980) looked at 49 companies and 49 other organizations with an interest in employer-sponsored training in Ontario. He found that 39 per cent of this group had no training programs and only 20 per cent had apprenticeship programs. A recent study of skill-development-leave programs in Canadian business and industry (Pazderka et al. 1983) was conducted for Employment and Immigration's Skill Development Leave Task Force to assess the viability and acceptability of a number of skill-development training alternatives. Only 52 per cent of the 360 firms sampled provided training programs that involved some time off work, and only 40 per cent maintained apprenticeship programs. Of those firms with programs, only 18 per cent of the employees had participated during the previous year, with the typical participant spending 4.3 days in training during the year.

Prior to the 1970s, when Ontario relied primarily on immigration to meet skilled-labour needs, training within industry was *ad hoc* and firm- or industry-specific. With youth unemployment an issue and a necessary decrease in the use of immigration as a source of skilled labour, the Ontario government became much more involved in training programs. Outside of apprenticeship programs, the two main initiatives of the Ontario government have been Training in Business and Industry (TIBI) and the Ontario Career Action Program (OCAP).

The TIBI programs have had considerable success. The provincial government contributes up to one-third of the total cost of training. The programs are usually in-house, quite industry-specific, and of short duration – from a few weeks to a maximum of one year. Since the trainees in this program are already employed, reasons for participation include career advancement and retraining to avoid becoming redundant. In fact, reflecting the latter concern, about two-thirds of the government funds are earmarked for high-technology training for employees facing technological change in the workplace. This type of program has considerable potential because it responds to very immediate concerns, uses the well-developed facilities of the CAATs, and is relatively flexible in implementation.

OCAP is designed for young people aged 16 to 24 who have left the formal education system, have been unemployed for at least three months, and have not held a full-time job in the area of their preferred occupation. Although the total number involved in this program has not been high, it has been reasonably successful in reducing seasonal youth unemployment.

These two programs, however, tend to be exceptions. While Ontario government programs have had some success overall, both levels of government have not had great success in encouraging industry to undertake long-term training programs.

At the present time, it would be extremely difficult to expect industry to provide formal entry-level training for young people. The training programs offered by industry tend to be brief and specific to current short-term needs and, as a result, ebb and flow with the state of the economy; also, they are not designed to meet the need for those upgrading and retraining programs that require longer periods of training. However, short-term upgrading programs that do not interfere with production have been effectively delivered by industry, especially those offered in collaboration with the colleges.

Apprenticeship training is a form of on-the-job training that requires a number of years for program completion. The programs tend to be unstable, unpredictable, and often offer only a narrow range of work experiences. Currently, colleges play a role in apprenticeship programs by offering the in-school training components, but have no control over the out-of-school portion. With the general scarcity of jobs in the last few years, it has become very difficult for apprentices to find initial work placements. This is especially true of the Ontario-government-sponsored Linkage I program that enables students to obtain the basic in-school component of an apprenticeship program while still in secondary school. The difficulty of locating placements for workers after the secondary-school program has been completed has created an air of uncertainty about the program and effectively undercuts the interest of potential participants (King and Hughes 1984).

In summary, the only real success that industry has had in delivering skill-training programs is with short-term programs directed at low-level skill development or management skills. If there is to be a dramatic development in the quality of our workforce, then, it is not likely to be accomplished by an expansion of training programs in business and industry.

RELATIONSHIPS BETWEEN CAATS AND UNIVERSITIES

It is clear that a sharp distinction can be made between the college and university systems. They have minimal formal interaction through the Ministry of Colleges and Universities (MCU), and virtually no informal interaction. There is an official liaison between the Council on University Affairs and the Council of Regents, but these groups appear to share few common concerns. Colleges are much more centralized and dependent upon the MCU for policy direction than are universities. This is in part because they are creatures spawned by the provincial government, whereas the older universities were originally independent of government. The MCU Act restricts itself for the most part to issues related to the CAATs.

A quick review of college and university calendars reveals very few incidences where one mentions the other, although there are some very interesting exceptions. St. Clair College devotes a segment of its calendar to 'Other Institutions of Higher Learning'. It identifies a number of routes whereby college students can receive semester credits that also count toward a university degree. For example, a student may enter the University of Windsor after completing a three-year college program in journalism and be credited with the equivalent of ten full university courses. This enables the student to obtain a diploma in journalism and a university general degree in five years. In addition, McMaster University offers a Bachelor of Health Science program to graduates of Mohawk College's diploma program in occupation therapy or physiotherapy as well as to graduates of similar programs in other colleges. Sheridan College collaborates with York University in the fine-arts area. St. Lawrence College has a contract with the University of Ottawa to provide educational-support services. The common feature of all these programs is that they were developed at the regional level. There is little evidence of real collaboration at the government level.

Not all college-university interactions are collaborative. There is a strong movement among university nursing faculties, for example, to require all nurses to have university degrees. This would pose an interesting problem for the colleges, which currently have about 9,000 potential nurses enrolled.

At one time there had been fears that colleges would decline into university-transfer institutions, where 'in about a ten-year cycle you will have a fourth rate liberal college with a few long-haired pedants strutting around with a handful of students' (comment by Norman Sisco in Fleming 1971, p. 516). But this has not happened. Colleges have retained and further refined their vocationally-oriented approach. The number of students seeking transfer to universities is reasonably small and probably less than the number of students with university credits going to the colleges. Nevertheless, this may be an opportune time to consider the possibility of developing common transfer sequences. It would probably be a serious mistake to expand the general-arts enrolments in the colleges to serve this purpose, but it would be useful to consider career sequences that would involve further vocational qualifications being obtained at the university level.

FUTURE DIRECTIONS

By almost any measure, the CAATs are extremely successful. They provide occupation-specific programs in direct response to labour-market demands. Considering the wide differences in educational background of enrollees, their attrition rates are relatively low and their placement rates are high. They are not immediately vulnerable to shifts in government priorities on either political or economic grounds. What is equally important is that they also offer a broad educational experience to their students that includes general-education courses as well as opportunities to participate in a wide array of extracurricular activities.

The CAATs have delineated their own postsecondary-education territory without threatening the role and functions of Ontario universities. Nevertheless, some collaborative efforts have taken place that can be built upon in the future. Perhaps the most fruitful efforts relate to the sequencing or stacking of programs that allows college graduates to receive advanced credits in university professional programs. The occupational-therapy or physiotherapy sequence at Mohawk and McMaster is a good model. Programs in the business, technology, and social-services areas are also well suited to this design.

On the surface, Ryerson Polytechnical Institute would seem to present an ideal environment for extending the career-mobility potential of college programs, but falling as it does somewhere between the colleges and universities, there may be difficulties with roles and status.

The colleges generally have been better served by the provincial and federal governments with regard to technical facilities and equipment than have the universities. The notion of sharing these facilities is technically feasible and will probably become more attractive to university officials if they become increasingly short of funds.

During the past three years, I have had the opportunity to take a close look at apprenticeship training in Ontario. The variety, complexity, and inconsistency of these programs can be explained better by social and historical events than by systematic efforts to make the programs effective. The confusion is compounded by the fact that there are compulsory and voluntary regulated trades as well as nonregulated trades. Some training programs are clearly more effective than others in terms of recruitment, program stability, and quality of learning experiences. But as a model of training, the programs are simply outdated. They are not only unattractive to good candidates because of uncertainty of program delivery; they are also too dependent on an often too exploitive workplace for their hands-on training. In goals and structure, the education and training for most apprenticeable occupations would be best accomplished within the CAATs. The CAATs already have taken advantage of the co-operative-education movement to broaden the work-experience component of many of their programs, and this format would be appropriate for most apprenticeship programs.

Both the CAATs and the universities have been active in providing upgrading and retraining programs for business and industry. The number of programs offered by both should be expanded. With few exceptions, training programs currently delivered in the private sector are insufficient and there is little evidence of potential for improvement. There is a market for these training services, and the provincial and federal governments are willing to fund them.

NOTES

1 The information for the discussion on the historical background of the colleges came from Fleming (1971), Sheffield, E.F. (1974), and the Minister's Task Force on College Growth (1981).
2 This discussion was influenced by Leslie (1980), Minister's Task Force of College Growth (1981), and Statistics Canada enrolment predictions.
3 This section is based on studies conducted by the Ministry of Colleges and Universities' Special Projects Office (Ontario 1981, 1983), and A.J.C. King (1983).
4 Conversations were held with Mr. W. Cruden, President of St. Lawrence College, and Mr. P.R. Doyle, President of Sault College in an effort to identify the major issues concerning the colleges.
5 Current calendars of the following colleges were reviewed: Algonquin, Conestoga, Fanshawe, Georgian, Humber, Seneca, Sheridan, Sir Sanford Fleming, St. Clair, and St. Lawrence.
6 K. Weiermair's two major studies on apprenticeship training (1982a, b) were particularly helpful as background. Two reports of the Ontario Manpower Commission (1982, 1983) were used to amplify the Ontario scene.

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Comments

Ron Doyle

Dr. King's presentation is very complimentary to the work of the 22 community colleges.

While his comments relate to a very successful past history, he rightly points out that there are a few clouds on the horizon. I will comment on the clouds, and also on their silver lining.

Early in his paper Dr. King sets the stage for some later comments on the need for co-operation between the universities and the colleges. While I also support co-operation, I think it is important to challenge his comment that Premier Bill Davis believed that no able or qualified student should be prevented from going from a college to a university or vice versa. The actual quotation that follows does not really support this premise. I know through personal dealings with Mr. Norman Sisco, the original chairman of the Council of Regents, that the colleges were very careful to design their programs as career-oriented, terminal programs, and to avoid any manipulation of any curriculum for the purpose of suiting the need to facilitate transfer from a college to a university. There is no question that this has become a topic for debate, especially for some of the graduates from the community colleges. However, in light of this, one of the interesting phenomena to observe is the large number of university grads who have gone on to college to take specific career-oriented training.

The mandate

Dr. King refers to the original mandate given to the colleges, and

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questions whether or not we will be able to continue to meet that mandate. The mandate has been under some scrutiny, especially in the last three or four years. Quotations in the original documents, such as 'the CAATs should each serve the needs of their communities' have led to some disagreement as to whether or not they should be interpreted in terms of 'local preference', especially for those programs that are offered by all colleges in a specific region. The original mandate also went on to state that colleges were to meet the needs of graduates from *any* secondary-school program, apart from those wishing to attend university. While Dr. King's statistics indicate that we have met the needs of students coming from the general level, the advanced level, and Grade 13 to a different level of success depending on the background of the student, we have nonetheless met their needs in a respectable way.

The statistics also show that we have not been as successful in meeting the needs of basic-level students, those students in night schools who are not yet taking general- or advanced-level courses. However, this is only in relation to full-time postsecondary programs. Dr. King's statistics don't take into account the specific programs that have been offered through Manpower Retraining, and that are only managed by the colleges, which are more appropriate for the basic-level students. The colleges do offer a series of programs sponsored by the federal government, such as Basic Training and Skill Development plus a variety of short-term programs, that can, in fact, be interpreted as meeting the needs of any secondary-school graduate. In many cases, even those who did not complete high school are eligible for admission to these specific programs, which demand a Grade-10 level of proficiency.

Admissions criteria

Dr. King has spent a fair amount of time talking about admissions criteria. There have been various memoranda recently that have attempted to clarify admissions criteria in more specific detail, and some of them would appear to be giving in to some public pressure. In particular, the process of random selection, wherein all applicants who have met *all* of the requirements for a specific program then go through a random-selection process, has been under fire. The latest draft memorandum from the Ministry of Colleges and Universities has suggested that through some creative technique there should be no need to use random selection and, in fact, has suggested that the words 'random selection' are no longer appropriate.

Given the achievement rates of the colleges and the success they have had in meeting not only the words but the intent of the original mandate, I sincerely question whether there is any further need for delineation of admissions criteria, particularly since the forecast and actual statistics indicate that we have probably peaked our full-time postsecondary enrolment, with the colleges this year experiencing their lowest growth rate in their history.

Dr. King makes an interesting comment under the section of his paper entitled 'Structure of the CAATs': namely, that 'most colleges offer a general-arts program for students who are unclear about future goals.' There are approximately seven colleges that offer a general-arts or a variation of a general-arts program. However, it is not normally intended that anyone graduate with a General Arts Diploma. These programs are aimed primarily at helping students sort out their future goals and/or providing the academic upgrading necessary for some before they can complete various technology and business programs. I would suggest that it would be far more appropriate to call these programs what they really are, namely developmental-education programs, and to allow any of the 22 colleges to run such programs where they are needed. Not only would this help students reach minimum-requirement levels, particularly in the areas of math and English, but if integrated vertically they also could foster a significant improvement in student-achievement rates.

Declining enrolments

I am not sure whether or not Dr. King has seen this year's enrolment statistics. If not, one might call him a prophet. We are indeed experiencing our first decline. However, the decline is only in the rate of growth: we have continued to grow at 1.8 per cent this year, but this is the smallest rate of growth we have had since the beginning of the colleges.

An overall decline in enrolment in colleges and universities could precipitate destructive competition, not only between the colleges themselves, but between the colleges and universities, as both of us operate under an enrolment-driven formula. It would take statesmanship on the part of college boards and presidents to accept that growth is not the main issue. In fact, a lack of growth might provide a real opportunity for all of us to concentrate on the quality of the education that we offer and attempt to reduce dropout rates.

Interaction

While trying to be all things to all people has been an important part of the college strategy, declining resources, declining enrolment, etc. indicate that it is time for us to re-examine this position and to try and bring the colleges together as a college system, as opposed to a system of colleges. While the universities struggle to rationalize their mandate, the colleges must also try to rationalize their program offerings if all are to survive and promote excellence.

The first significant voluntary program of rationalization has evolved in the area of francophone programming. Francophone programming came late to the colleges, and with the experience of hindsight, francophone co-ordinators were able to set up a rationalization model before there was any destructive proliferation of low-volume courses. They developed a model that identified legitimate college *district* programs, for duplication in all colleges, as well as *regional* programs, which need only be assigned to one college in a given region. There were also specific programs designated as *provincial* in nature, and agreement was reached as to which Ontario college should carry them. The five northern colleges are now voluntarily attempting to adopt this model for all of their programming. We are hopeful that all 22 colleges will one day follow suit.

Of special interest to all of you is the potential for co-operation between the universities and the community colleges in Ontario. As I mentioned before, students in the past have expressed an interest in establishing official transfer credits for those wishing to go on to university. Dr. King has identified some of the universities who grant transfer credits, pyramid programs, and informally recognize the work of college students. Although there are relatively few college students that move immediately to the university sector, this will become a growing market for universities, and it will be important to pursue co-operation so that students who wish to enter universities at a later date may do so and obtain credit for prior work.

At the present time the colleges' interaction with the universities is varied and individually negotiated. McMaster University provides a one-semester B.H.Sc.-degree completion for Mohawk College diploma grads of physiotherapy and occupational therapy. St. Clair College has formal arrangements with the University of Windsor. Sheridan has co-op programs with both the University of Toronto and the University of Windsor, enabling direct entry into fine-arts degree programs. Seneca College has a formal agreement with York University, and many of the college graduates from three-year technology programs take advantage of the direct-entry program at Lakehead University that will grant them credits toward its Bachelor of Science degree.

There is also a whole variety of services offered informally by the colleges to various universities, ranging from free use of rooms to fee-for-service for counselling, registration, etc. Dr. King has referred to the possible use of college facilities by universities and this may prove to be the next phase of meaningful co-operation. The colleges have been very successful in acquiring excellent facilities and equipment over the last few years, especially in those areas related to the high-technology field and funded by the federal government. Perhaps universities should consider enhancing their basic research by setting up applied-research contracts with the colleges. Such sharing of facilities would be a way of ensuring that the taxpayers in Ontario reap the full benefit of the significant funds that have been allocated to the upgrading of equipment in the colleges.

Administration

The problems highlighted by Dr. King with regard to the administration of the federal training programs are real. One might well imagine the impact on faculty morale of some of our faculty having to face, every year, the prospect of termination in the event the federal government does not purchase the past year's programs. Some of them have been facing this annual trauma for some twelve years now.

The proliferation of industrial-training programs has now reached, I suggest, a ridiculous level. Up until September 1984 we had 14 specialized industrial-training programs to administer. This has now gone up to 17, all of which are aimed at specific groups and have their own specific rules and regulations. We will continue pressing to have the number of these programs reduced regardless of whether or not they are under federal or provincial direction. In fact, we may even be so radical as to suggest that, given our proven record, we should direct them ourselves. We should be provided with some resources, be allowed to work them out at the local level with local industry and potential employees, and then go through a value-for-money audit at the end of the exercise, rather than having to spend so much time, as we do now, trying to fit a very few people into one of 17 established programs.

While I might not be as strong as Dr. King in condemning industrial training, I do share some of his concerns. However, we have been very successful in working with local industry to offer, either directly or indirectly, meaningful industrial training. I concur that we are probably in the best position to administer industrial training and to make it cost-effective. Also, in some areas where it is difficult for both the management and the unions to co-operate in the industrial-training program, one or the other side finds it easier to work with a third party such as the college.

It is entrepreneurial creativity and sensitivity to client needs that has made the colleges as successful as they are. With approximately 1,000 advisory committees and 12,000 noncollege personnel assisting us to develop appropriate program responses to identified needs, I believe we will continue to be successful. While we may have minor setbacks from time to time, silver linings still shine brightly.

Comments

Ray Hainsworth

Professor King's paper presents a fair assessment of the development and current status of the CAAT system in Ontario. He has identified several key issues in his paper that relate to the themes of this conference. The major ones include: the state of the 'client pool' (has it peaked?); the possible increase in competition between the CAATs and the universities for a greater 'market share' of the traditional and emergent client pools; questions concerning appropriate admissions policies; trends toward standardization in programs; the perceived limitations of on-the-job training; suggestions for an increase in institutionally-based vocational training; and finally, some thoughts on the question of transfer routes from the CAATs to universities. Obviously, given the short period of time allocated to me today, it is impossible to deal here with all of these issues. Therefore, my comments are limited to issues surrounding the client pool, competition with universities, admissions, the appropriate setting for vocational training, as well as my view on how vocational training should be funded.

Client pool

I agree with Professor King that the traditional client pool is shrinking. Further, it is clear that the current recession has masked this reality. The colleges have partially acted as a 'holding tank' for high-school and college grads.

It is interesting to note that placement ratios are better for arts and sciences grads than for high-tech students, reflecting the decimation

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of the manufacturing sector as well as the growth of the information- and services-based economy. The most recent data show that the 1984 fall enrolment in the CAATs is relatively stable throughout the system, which indicates that we are into the predictable demographic decline despite the lingering after-effects of the recession.[1] The key point is: which system – university or CAAT – is going to tap most successfully into new markets? Clearly, over-reliance on the old market would mean a substantially smaller system.

Competition between CAATs and universities for clients

From the perspective of addressing the needs of a nontraditional market, it is clear to me that the CAATs have a strong upper hand for a variety of reasons. First, they have an established vocational orientation and strong links with both the employer and labour communities, arising out of a practice of using CAATs for upgrading and retraining, apprenticeship course work, labour-studies programs, etc. Second, and equally important, is the strong market orientation of the CAATs. College teachers and administrators have been much more aware than university professors of the old maxim, 'He who pays the piper calls the tune'. All too often, the concept of academic freedom has prevented university 'trainers' (I use the word advisedly) from properly responding to a client's needs. A third, and possibly more crucial, advantage for CAATs is the widespread feeling among many working-class people that universities are for the 'others' – the 'bosses', the 'rich', the professionals. It is true that this sense of alienation has diminished somewhat with the large influx of university graduates onto the job market in recent years, but from my experience, it is still the prevailing feeling amongst the 30- to 50-year age group that is the prime target for continuing education. On the other hand, as I indicated earlier, most working-class Ontarians, or at least the unionized ones I encounter, are quite comfortable with the idea of attending a CAAT.

Appropriate admissions policies

In the context of responding to a bread-and-butter issue like creating a new market, concerns over admissions policies that are related largely to secondary-school graduates are perhaps somewhat misplaced. Let me remind Dr. King that when they began, the colleges had as their target not just high-school graduates who were not university bound but also adult learners. I quote Premier Davis from the *Basic Documents*:

> Now having put in train our plans for other areas of our school system, we must and can focus our attention on the design of this remaining section, directly related to the applied arts and technology, for full-time and for part-time students, in day and evening courses, and planned to meet the relevant needs of all adults within a community, at all socio-economic levels, of all kinds of interests and aptitudes, and at all stages of educational achievement. (Ontario Council of Regents 1983)

The point here is that adult learners are obviously different from adolescent learners. To apply criteria to adults that may or may not be relevant to 18-year-olds is not only inappropriate but probably discriminatory as well. Further, such an approach will probably be counterproductive in terms of reaching and capturing the desired market.

One further point on admissions: the lottery approach has been used really only on a limited number of high-demand, low-enrolment courses. Further, it is the last resort, after an interview, a test, a resumé, a portfolio, etc. Many places are still available in more general courses in non-Metro areas, as I'm sure the president from Sault College can confirm. Let me suggest that there perhaps be serious consideration to giving local preference to adult learners with family responsibilities over adolescents who, arguably, would benefit from leaving home for a period of time.

On-the-job training and apprenticeship

Professor King makes a valid point when he describes the steering effect of federal financing. However, for Ontario at any rate, the case is probably overstated. I would be extremely surprised if more than 25 per cent of students in any Ontario CAAT were federally funded. The vast majority are in regular postsecondary programs funded by the province.

Professor King's comments concerning on-the-job training pose a real dilemma for me. His data on the paucity of company-sponsored training is surely correct, yet his conclusions are puzzling, especially in regard to apprenticeship.

You know I promised myself I wouldn't say this, but, there you go again, Alan.

I agree that business does very little training. I agree that it is subject to the ebbs and flows of the economy. I agree that some traditional apprenticeship programs are too rigid and would be perhaps more appropriately based on competency rather than chronological benchmarks. It might even make sense in some instances to look seriously at more generic, 'multi-skill' trades.

However, is it not somewhat ironic that in the industrial sector the only training that employers are willing to spend large amounts of money on is, in fact, apprenticeship training; that when employers describe the ideal skilled worker, he or she sounds very much like the traditional journeyman with well-rounded, broadly based training, largely acquired in a hands-on fashion; or that with certification a few years ago the number of apprentices increased dramatically? Further, is it not somewhat inconsistent to hear praised the virtues of broadly based, liberal-arts university studies because of the flexibility they provide graduates, when a similar, broadly based approach for workers' apprenticeship programs is seen as wasteful?

Likewise, it is no surprise for me to hear employers unanimously praise those university programs with substantial workplace exposure such as Waterloo's engineering co-op program or the various social-work programs with compulsory placements. I can state from personal experience that the only really valuable part of the year I spent at the Faculty of Education of the University of Toronto was the time I spent in the practice-teaching component.

I think that I have made my point. Were I in an uncharitable mood, I might very well go on to conclude that the attack on apprenticeship programs by nonbusiness people smacks of a definite class bias. To businessmen I can at least credit a pecuniary motive.

Let me conclude by saying that of course there are problems with on-the-job training. But they are not problems that can be solved by turning over all training to the colleges. The real problem is the question of money and who provides it. It was somewhat amusing to read a *Toronto Star* editorial in September 1984 that appeared to support the concept of a levy-grant system to fund skills training. It gave credit for the idea to the Ontario Manpower Commission. That is OK. Those in the field realize this is an idea that has been promoted for years by we in the labour movement. But we don't mind sharing the credit for it with our friend Ben Wilson.

It would seem to me that if this past recession has taught us any lesson, it is that the training system needs a source of funding that is capable of overcoming cyclical fluctuations. So once again, as I join increasingly 'respectable' company – the Major Projects Task Force, the Adams Commission, the Allmand Task Force, the Ontario Manpower Commission, and now the *Toronto Star* – I would urge the Ontario government, at this transitional period, to seriously consider extending its favoured system of user fees to the business community by implementing a levy-grant system to fund skills training.

NOTE

1 As of 14 September 1984, total CAAT enrolment had increased by 1.8 per cent from September 1983. However, there was substantial variation among the colleges (see list below).

Percentage increase (decrease) in 1984 from 1983

College	Per cent
Algonquin	(1.5)
Cambrian	(6.5)
Canadore	7.6
Centennial	18.5
Conestoga	5.9
Confederation	1.8
Durham	1.1
Fanshaw	0.4
George Brown	5.9
Georgian	4.0
Humber	4.5
Lambton	(6.1)
Loyalist	1.3
Mohawk	(2.2)
Niagara	2.1
Northern	(9.2)
St. Clair	(4.9)
St. Lawrence	(3.3)
Sault	(5.8)
Seneca	6.7
Sheridan	(0.9)
Sir Sanford Fleming	(3.1)
TOTAL 1983	97,499
TOTAL 1984	99,219

SOURCE: Ministry of Colleges and Universities. Unpublished data obtained from a telephone survey of CAATs conducted by the Ministry's Student Services Division, College Affairs Branch

REFERENCE

Ontario Council of Regents for the Colleges of Applied Arts and Technology (1983) *Basic Documents: Colleges of Applied Arts of Technology* (January) (Toronto)

A decade of change: Canada's foreign-student policy, 1972-82

Alekos Athanassakos

INTRODUCTION

Although the issue of foreign students in Canada has received a lot of attention lately, studies on the subject are limited, primarily due to the unavailability of data. This fact, coupled with the subjectivity often surrounding the issue, mitigates against an objective scientific approach.

In this paper we will examine the rationale behind government legislation as well as its effect on foreign-student enrolment. Some recommendations will also be made based on the policy objectives that we perceive to be relevant. This, however, neither implies that our perceived objectives are 'correct', nor that they should be adopted by the government.

SUMMARY OF STATISTICS

The statistics in this paper focus primarily on visa students and not landed-immigrant students. However, one should always keep in mind both groups when analysing the foreign-student situation in Canada/Ontario. The reasons for this are given below:

- The fact that one is a landed immigrant does not imply necessarily that he/she intends to stay in Canada. For instance, it is more advantageous for foreign students to enter Canada as landed immigrants and some may attempt to do so.

- Whether foreign students come to Canada as visa students or landed

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immigrants does not make any difference in terms of the social benefits, or the lack of them, that their presence provides to Canadians. If we are concerned about the number of foreigners in our universities, then the titles under which they enter Canada are not important.

Thus, using only statistics for visa students will underestimate the 'real' number of foreign students in Canada.

Tables 1 to 4, which summarize data presented in the remaining tables, show percentages and percentage changes of visa students in Canada between the years 1972/3-76/7 and 1977/8-81/2. The reason for such a grouping of years is that up to 1976/7, foreign students paid the same tuition fees as Canadian students (with the exception of some faculties/universities that charged an additional \$100-\$200), while after 1976/7 they paid higher fees. This separation of years was necessary, therefore, in evaluating whether or not higher tuition fees have had any effect on visa-student enrolment.

HISTORICAL BACKGROUND

Canadian universities have historically been free to admit foreign students into their programs. This has usually been done on the basis of academic merit, but also in order to achieve international representation. By the early 1970s, for the first time the number of foreign students in Canada exceeded the number of Canadian students abroad (see CBIE 1981b). During the first half of the 1970s, approximately 50 per cent of all foreign students were concentrated in Ontario (Table 4), and most of them (approximately 60 per cent) came from developed countries (see Table 2).

By the end of 1973 more than 43,000 non-Canadians were enrolled in Canadian universities – 11,000 visa students and 32,000 landed immigrants (these numbers are calculated from Tables 7 and 8 which appear later in the paper). The federal government was quick to react to this influx. Although it does not have direct control over entry to postsecondary institutions, it nevertheless has indirect control. First, it provides considerable funds, especially for research, and second, it can restrict entry into Canada and the employment opportunities open to foreign students. The latter restriction was enacted in 1973. Formerly, many students were given visas at the border and others were permitted, once in Canada, to change their status from visitor to student or from visa student to landed immigrant. In 1973, applica-

TABLE 1
Visa students as a percentage of the total student population

	Canada			Ontario		
	Under-graduate (%)	Graduate (%)	Total (%)	Under-graduate (%)	Graduate (%)	Total (%)
1972/3-1976/7	2.6	9.3	3.4	2.8	9.4	3.6
1977/8-1981/2	3.7	11.4	4.6	4.1	12.6	5.2
1972/3-1981/2	3.2	10.3	4.0	3.5	11.0	4.4

TABLE 2
Percentage of visa students coming from selected developed countries: Hong Kong, Oceania, Japan, Europe, U.S.

	Canada			Ontario		
	Under-graduate (%)	Graduate (%)	Total (%)	Under-graduate (%)	Graduate (%)	Total (%)
1972/3-1976/7	60.3	50.8	57.4	58.8	51.3	56.4
1977/8-1981/2	49.1	45.3	48.0	52.6	46.5	50.8
1972/3-1981/2	54.7	48.1	52.7	55.7	48.9	53.6

NOTES: 'Oceania' includes only Australia and New Zealand.
'Europe' excludes Bulgaria, Czechoslovakia, Greece, Hungary, Iceland, Poland, Portugal, Romania, and Yugoslavia, and includes USSR.

tions for the status of landed immigrant could only be submitted from outside Canada. At the same time, foreign students lost their right to work unless they had a work permit. A work permit was issued only when there were no qualified Canadians available for the job (a rare case given the type of work that students seek). Exemptions, however, were made for graduate students who were offered an assistantship.

However, after a temporary decrease in 1973/4 (see Table 7), the number of landed immigrants and visa students enrolled in Canadian universities again continued to increase. By 1976/7, more than 50,000

TABLE 3
Visa-student enrolment

	Percentage change (first and last year only)				Average rate of change per year			
	Canada		Ontario		Canada		Ontario	
	Undergr.	Grad.	Undergr.	Grad.	Undergr.	Grad.	Undergr.	Grad.
1972/3-76/7	+72.8	+70.8	+57.2	+66.6	+16.0	+16.2	+13.7	+21.7
1977/8-81/2	+31.4	+21.6	+80.8	+21.4	+10.6	+7.2	+14.5	+5.4
1972/3-81/2	+181.2	+145.0	+202.3	+114.9	+13.0	+11.4	+14.1	+12.6

TABLE 4
Visa students in Ontario as a percentage of visa students in Canada

	Undergraduate (%)	Graduate (%)	Total (%)
1972/3-1976/7	48.3	50.9	49.1
1977/8-1981/2	45.2	45.9	45.4
1972/3-1981/2	46.7	48.4	47.3

non-Canadian students, more than 20,000 of which were visa students, were in universities in Canada (again, numbers are derived from Tables 7 and 8 below). This increase, together with the desire to curtail educational expenditures, brought about the decision by the Alberta and Ontario governments to increase foreign students' fees (see Table 5 for statistics on foreign-student fees in Ontario and Canada). The Ontario government increased the fees to approximately $1,500 per academic year for universities and to $750 for colleges (although some institutions, such as Trent University, initially resisted the changes). Partly as a result of protests, the final policy in Alberta was to raise foreign-student fees by 50 per cent over

TABLE 5

Tuition fees for full-time undergraduate and graduate visa students (2 semesters)

	Canada		Ontario		Canada excluding Ontario	
	Undergraduate	Graduate	Undergraduate	Graduate	Undergraduate	Graduate
1971/2	523	492	527	476	523	501
1972/3	553	531	579	534	542	529
1973/4	558	557	612	638	534	520
1974/5	562	559	620	639	536	520
1975/6	574	525	626	572	548	499
1976/7	596	556	627	564	581	551
1977/8	–	–	1,419	1,478	–	–
1978/9	–	–	1,461	1,513	–	–
1979/80	–	–	1,529	1,447	–	–
1980/1	–	–	1,634	1,787	–	–
1981/2	–	–	1,811	2,004	–	–

NOTES: The above numbers are averages of the varying faculty fees and are weighted by the number of students per faculty. They do not, therefore, represent the actual fee in any given institution. Rather, they represent the price that a foreign student would most likely pay on average.

After 1976/7, significantly more provinces began to charge differential fees for visa students. However, the range in fees became so wide for Canada overall that calculating an average fee here was not seen as useful. In Ontario, on the other hand, an average fee is representative as since 1977 all institutions have charged differential fees for visa students.

SOURCE: Statistics Canada (various years), Cat. 81-219.

those of Canadian students.

Both governments justified the changes by saying that neither foreign students nor their parents contribute any taxes to the treasury and therefore should make a larger contribution towards the cost of education. Both governments exempted students under sponsorship of a government agency, refugee students, students with diplomatic status and, in general, any person whose main purpose in visiting Canada was not to study. In Ontario, exemptions were also made for Commonwealth-scholarship and Ontario graduate-scholarship holders.

In 1978/9, Quebec and the Maritime provinces followed the Ontario/ Alberta example. Then in 1981, Quebec decided to increase foreign-student fees even more, requiring that foreign students pay 60 per cent of the average costs of their university and college education. This translated into $4,100 per academic year for undergraduates and $6,150 per three semesters for graduates. The list of exemptions, however, was lengthy. For example, students who studied French or Quebecois literature were exempted. Finally, in 1983/4 the Ontario government further increased foreign students' fees to 67 per cent of the costs of their education.

Besides increases in foreign-student fees, universities have also introduced other policies which restrict foreign students. Around 1976, some universities moved towards a quota system. For example, the University of British Columbia stated in one of its calendars in the mid-1970s that it would not admit a foreign student to an undergraduate course if that course were available in his or her home country. Other universities in Regina, Winnipeg, and Alberta have also established quota-type regulations. At about the same time, the Canadian Bureau for International Education (CBIE 1981c) conducted a survey of, among other things, admission practices. It found that half of the universities responding (38) limited foreign-student enrolment, but only two specified the exact quota limits in their calendars. Foreign students were most commonly limited in the health sciences and other professional programs. Exemptions were made for students sponsored by the Canadian International Development Agency (CIDA). In general, however, there is no official quota system in Canada. Official quota systems do exist in other countries. For example, in Germany, 8 per cent of all places in universities are reserved for foreign students.

At the college level, foreign students were admitted on a space-available basis. This type of restriction is provincially imposed in Ontario where preference is given to residents of the area, other Ontario residents, other Canadian residents, students from Commonwealth countries, and finally other foreign students, in that order. In Saskatchewan and British Columbia, legislation prohibits colleges from admitting foreign students on an individual basis. British Columbia's colleges can admit foreign students through a foreign-government or agency program.

Although all of the above policies were designed to restrict the number of foreign students, some financial assistance was still offered to those admitted. All universities, for example, offer fellowships, bursaries, and teaching assistantships at the graduate level. However, little aid in this form exists at the undergraduate level.

Manitoba, Ontario, and Quebec earmark a portion of their graduate scholarships for foreign students (e.g., it is 10 per cent in Manitoba and 5 per cent in Ontario). Emergency funds for foreign students have also been set up at more than 80 per cent of the universities. Money is dispersed to those in genuine need in the form of short-term interest-free loans. Also, around 1979 some changes were made to the previous year's new Immigration Act (1978) to allow students in desperate financial straits to work in Canada. Institutions with foreign students also offer foreign-student services (such as those that help prepare the student to come to Canada and adjust to the new environment for them here).

SOCIOECONOMIC BACKGROUND OF FOREIGN STUDENTS

Although information about the social and economic background of foreign students is vital to policymakers (or should be), not much is available on the foreign students in Canada. In 1977, the Institute of Behavioural Studies at York University, on behalf of the CBIE, released a study entitled 'A Patron for the World?'. More than 800 students across Canada were interviewed for it.

Table 6 shows some of the study's findings on the family background of foreign students in Canada. One-quarter of those responding were from Hong Kong and of the remainder, half came from urban areas. Less than one-fifth of the sample claimed that they were dependent upon their own savings to finance their studies in Canada. About 60 per cent reported that they had worked before entering Canada and 40 per cent of these worked as professionals or entrepreneurs. Only a small part of those interviewed indicated that costs or the availability of scholarships and other financial assistance were major factors in their decision to come to Canada. It is clear, therefore, that most of those interviewed came from an advantaged urban background.

About a quarter of the respondents indicated that they would have preferred to have gone to the U.S. or the UK, and cited problems of access and financing as principal reasons for not going. Most of them reported that they had a relative or friend who had previously studied in Canada. The lack of opportunity at home and their assessment of the quality of Canadian education were the main factors affecting their decision.

TABLE 6

Occupational group of primary, family support-service for foreign students in Canada, by region

	Professionals	Owners	Managers	Skilled trades	Semi-skilled and unskilled	Service	Primary industry and other	Number of cases
M.S.A. & L.L.D.C.[a]	23.2	18.1	5.5	10.7	4.1	11.2	27.2	(110)
Developing countries	15.7	40.1	7.8	7.9	8.7	10.7	9.2	(281)
Hong Kong	15.9	44.4	14.7	9.1	10.1	3.9	1.9	(250)
U.S. and other developed countries	39.8	14.1	9.2	13.7	3.9	12.7	6.6	(153)
TOTAL	21.3	33.6	10.0	9.7	7.6	9.0	8.8	(794)

[a] MSA = most seriously affected by recent global crises in petroleum and food; LLDC = least developed countries.

SOURCE: CBIE (1981b).

DISCUSSION OF STATISTICS

What can we conclude from the above interviews and statistical tables about the effect of the immigration and tuition-fee policies on foreign students? Given the lack of detailed information, especially about their financial background, our conclusions will be highly speculative. Bearing this in mind, we notice that all of the above policies had only a temporary effect (if any).

Effect of the Immigration Acts

Let us first examine the impact of the two Immigration Acts (1973 and 1978) on foreign-student enrolment, and turn our attention to Tables 7 and 8 (see also Figure 1). Calculations drawn from Table 7 reveal that the total number of undergraduate and graduate visa students in Canada and in Ontario declined in 1973/4 by 8.6 per cent and 28.9 per cent respectively. Also, Table 8 reveals that the total number of landed immigrants declined, for the same year, by 26.9 per cent for Canada and by 31.2 per cent for Ontario. In 1974/5, however, the total number of visa students in Canada increased by 17.1 per cent, while that of the landed immigrants increased by 26 per cent. (The number of landed immigrants is obtained by subtracting the figures in Table 7 from Table 8.) This one-year decline in the number of foreign students may or may not be due to the 1973 Immigration Act. My suspicion is that it is not. A look at Figure 1 and Table 8 reveals that the number of Canadian students also declined in the same year by 15.2 per cent (the only decline noted in the number of Canadian students) resulting in an increase in the ratio of visa students to the total student body. This suggests, then, that there could be important variables that affect student-enrolment rates other than the Immigration Act. One example might be the 1973 oil crisis.

With regard to the 1978 Immigration Act, it made it more difficult for anyone to apply for landed-immigrant status, and this did affect the number of landed-immigrant students enrolled in Canadian universities. For example, the number of landed-immigrant students in 1981/2 was 19.9 per cent less than in 1977/8. (Again, the number of landed immigrants is obtained by subtracting the figures in Table 8 from Table 7.) However, the 1978 Act did not affect the number of visa students. This finding serves to reinforce our suspicion that the decline of visa students in 1973/4 was not due to the Immigration Act of 1973.

TABLE 7

Enrolment of visa students in Canada and Ontario

	Actual numbers				Percentage rate of change				Visa students as a percentage of the total student population			
	Canada		Ontario		Canada		Ontario		Canada		Ontario	
	Undergr.	Grad.	Undergr.	Grad.	Undergr.	Grad.	Undergr.	Grad.	Undergr.	Grad.	Undergr.	Grad.
1972/3	8,294	3,679	4,308	1,959	–	–	–	–	2.3	7.0	2.6	8.0
1973/4	7,826	3,113	3,538	1,296	–6.0	–15.4	–17.9	–33.8	2.5	8.2	2.6	6.7
1974/5	8,535	4,279	4,502	2,471	+9.0	+37.5	+27.2	+90.7	2.3	9.0	2.5	10.1
1975/6	12,400	5,524	5,513	2,757	+45.3	+29.1	+22.5	+11.6	3.0	10.6	2.9	10.3
1976/7	14,330	6,285	6,773	3,263	+15.6	+13.7	+22.9	+18.4	3.2	11.7	3.4	12.0
1977/8	17,752	7,413	7,201	3,469	+23.9	+17.9	+6.3	+6.3	3.6	11.8	3.5	12.7
1978/9	18,545	7,781	7,371	3,651	+4.5	+5.0	+2.4	+5.2	3.7	12.2	3.6	13.5
1979/80	20,126	7,793	8,110	3,471	+8.5	+0.2	+10.0	–4.9	3.9	11.8	3.9	13.0
1980/1	20,100	8,252	9,903	3,709	–0.1	+5.9	+22.1	+6.9	3.5	10.2	4.3	11.3
1981/2	23,320	9,013	13,022	4,210	+16.0	+9.2	+31.5	+13.5	3.9	10.8	5.4	12.6
1982/3	25,622	9,617	14,567	4,232	+9.9	+6.7	+11.9	+0.5	–	–	–	–
1983/4	25,898	9,475	13,864	3,780	+1.1	–1.5	–4.8	–10.7	–	–	–	–

SOURCE: Statistics Canada (various years) Cat. 81-204.

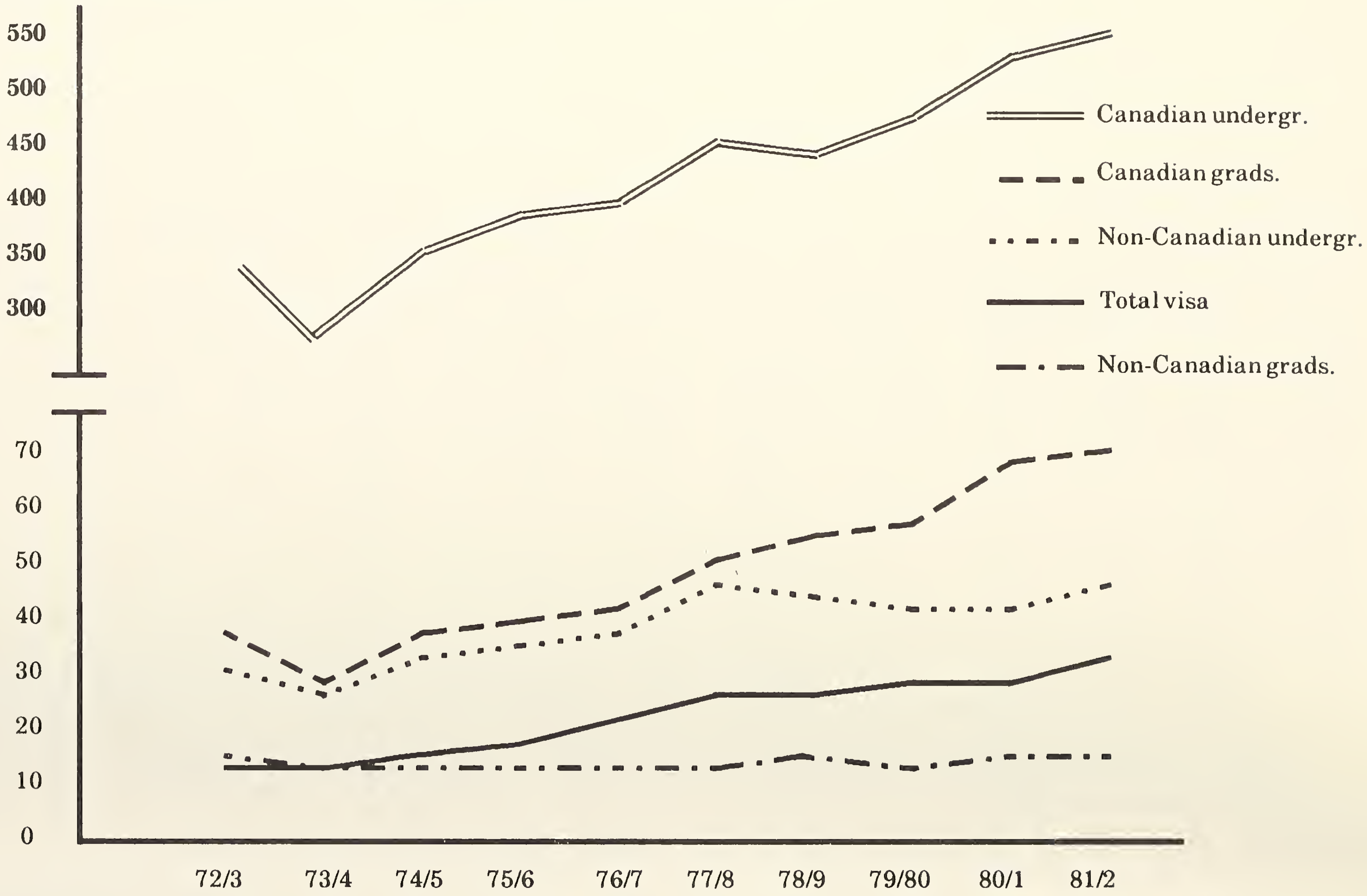
TABLE 8
Total student enrolment

	Canada						Ontario					
	Canadians		Non-Canadians[a]		TOTAL		Canadians		Non-Canadians[a]		TOTAL	
	Under-grad.	Grad.	Under-grad.	Grad.	Under-grad.	Grad.	Under-grad.	Grad.	Under-grad.	Grad.	Under-grad.	Grad.
1972/3	334,678	38,192	29,820	14,434	364,498	52,626	147,296	17,538	15,309	7,067	162,605	24,605
1973/4	288,428	27,787	24,572	9,960	313,000	37,747	125,346	11,881	11,345	4,570	136,691	19,451
1974/5	347,090	35,702	30,677	11,874	377,767	47,576	162,487	18,016	16,296	6,338	178,783	24,354
1975/6	378,938	39,018	35,026	13,029	413,964	52,047	171,851	19,935	18,159	6,758	190,010	26,693
1976/7	405,539	41,214	39,356	12,731	444,895	53,945	179,326	20,894	21,343	6,380	200,669	27,274
1977/8	450,577	48,814	46,164	13,919	496,741	62,733	183,232	21,351	21,890	5,999	205,122	27,350
1978/9	454,588	51,449	43,278	12,589	497,866	64,038	181,629	21,729	20,797	5,349	202,426	27,078
1979/80	475,906	53,976	41,414	11,872	517,320	65,848	186,968	21,801	20,171	4,801	207,139	26,602
1980/1	528,210	67,646	43,310	13,433	571,520	81,079	207,450	26,692	22,250	6,050	229,700	32,742
1981/2	548,018	69,828	46,409	13,910	594,427	83,738	214,709	27,062	25,206	6,416	239,915	33,478

[a] Non-Canadians are those who do not possess Canadian citizenship. They include, therefore, both visa students and landed immigrants.

SOURCE: Statistics Canada (various years) Cat. 81-204.

FIGURE 1: Enrolment in Canadian universities (thousands of students)



SOURCE: Tables 7 and 8.

Fee increases

Increases in foreign-student fees in 1977/8 also failed to decrease the number of foreign students in Canada/Ontario. Table 9 shows the (increasing) numbers of visa students for the years 1977-84 as a percentage of their number in 1976/7 (the year before the increase in fees). Further, from Table 3 we see that the only effect that higher tuition fees might have had was to reduce the average rate of growth for Canada overall by 5.4 per cent at the undergraduate level and 9 per cent at the graduate level in the period 1977-82. This rate of growth, however, was still positive. Further, turning our attention once more to Table 1, we can observe that the number of visa students as a percentage of the total student population increased in the period 1977-82 relative to the 1972-77 period. For all of Canada this ratio of visa students was on average 3.4 per cent in 1972-77 while it went up to 4.6 per cent in 1977/8-1981/2. In Ontario, the corresponding numbers were 3.6 per cent and 5.2 per cent.

In 1981/2, the foreign-student fees in Ontario were 188.8 per cent higher than they were in 1976/7 at the undergraduate level and 255.3 per cent higher than they were at the graduate level (see Table 5). Since the enrolment in 1981/2 was 62.7 per cent higher than that in 1976/7 at the undergraduate level and 43.4 per cent higher at the graduate level, this indicates that the 'price elasticity of demand' is positive rather than negative for visa students.

In general, one would expect that the tuition-fee elasticity of demand for education is rather small, the rationale being that tuition fees represent only a small part of the student's costs of education. It is surprising, then, to find that if the statistics on foreign students indicate anything, it is a response in the other direction.

Moreover, one would expect that foreign students are affected more adversely than domestic students by an increase in tuition fees, and that some as a result would leave Canada, perhaps switching to an American or British university, or, in the case of a fee hike in Ontario, to a university in another Canadian province. The first switch did not occur. The second did, but it was rather insignificant. As Table 4 indicates, 49.1 per cent of Canada's visa students were in Ontario from 1972 to 1977. This percentage declined to 45.4 per cent for the 1976-82 period, representing a small reduction of 3.7 per cent.

TABLE 9
Visa students in Canada and Ontario as a percentage of 1976/7 numbers

	Canada			Ontario		
	Undergraduate (%)	Graduate (%)	Total (%)	Undergraduate (%)	Graduate (%)	Total (%)
1976/7	100.0	100.0	100.0	100.0	100.0	100.0
1977/8	123.9	117.9	122.1	106.3	106.3	106.3
1978/9	129.4	123.8	127.7	108.8	111.9	109.8
1979/80	140.4	124.0	135.4	119.7	106.4	115.4
1980/1	140.3	131.3	137.5	146.2	113.7	135.6
1981/2	162.7	143.4	156.8	192.3	129.0	171.7
1982/3	178.9	153.0	170.9	215.1	129.7	187.3
1983/4	180.7	150.8	173.0	204.7	115.8	175.8

SOURCE: derived from Table 7.

This, then, together with the fact that less than one-fifth of those interviewed depended on their own savings, suggests that most of these students (with the exception of those who were sponsored) either came from rich families, or had relatives in Canada who financed their stay and perhaps their studies. This being the case, these students will not be very responsive to tuition fees as long as they are lower than those in the U.S. or the UK. Those students whose stays are financed by their relatives will be even more unresponsive than the others. These students will come to Canada even if tuition fees are greater than those in the U.S. or the UK (up to a limit, of course).

Similar conclusions about the lack of responsiveness of foreign students to higher tuition fees can be reached from the British experience. After the introduction of a two-tier fee system in 1967/8, a system that allows for adjustable fees depending on the demand for education, the number of foreign students in England stabilized at around 15,000. But by around 1970/1 it had increased to 30,000. It appears, then, that in the long run differential fees did not inhibit foreign students from going to England, despite a short-run effect.

COSTS AND BENEFITS OF FOREIGN STUDENTS: A POLICY ANALYSIS

Let us now examine the reasons that the Canadian governments have given for their policies on foreign students.

The justification of the Ontario and Alberta governments for increasing foreign-student fees in 1977 was that these students, or their parents, did not contribute any taxes to the treasury and thus should pay more. This being the case, it is not clear to me why such fees were set somewhere between only 50 to 67 per cent of a student's full costs of education and not at 100 per cent of these costs. Neither is it clear why, although students' accommodation in the campuses (wherever they exist) is also heavily subsidized, foreign students never had to pay differential fees for it.

We have already talked about the tuition-fee elasticity of demand, noting that the lack of data in effect renders this estimation impossible. Furthermore, if the existing numbers tell *any* story, it is that this elasticity is positive. It could not have been, therefore, the fear that we would lose all of our foreign students that made the government of Ontario (and the other provinces) increase fees by only 50 to 67 per cent. It must have been the arguments about the external benefits of foreign students that the governments had in mind; the rationale being that if the total benefits that the society receives from the foreign students are greater than the costs of educating them then they should be subsidized.

Let us examine, then, these external benefits to see whether or not this is true. Several authors have suggested a number of external benefits that a country receives from foreign students (including Verry and Layard 1979; CBIE 1981b; Sims and Stelcner 1981; Tillman and Sunderji 1982). A summary of these benefits is presented below:

1 Canadian students benefit from contact with foreign students since this gives them the opportunity to work with and to understand people from other cultures and countries.
2 The viability of some programs in some universities depends on the presence of foreign students in that their presence encourages more diverse programs than otherwise might have been the case.

3 The education of foreign students is a means of fostering good relationships with other countries. Further, in the future these students will tend to do business with Canada since they have become familiar with our technology and culture. In addition, today's students from the less-developed countries (LDCs) will constitute tomorrow's governing elite there – one can expect that their experience here will influence their attitudes towards Canada.

4 Foreign students in graduate programs provide both skilled manpower and valuable international links for research projects. Further, graduate students who are employed as research assistants (or doctors who do their internship) are remunerated less than full-time nonstudents. In this case, then, foreign students provide cheap labour.

5 Subsistence expenditures by foreign students are beneficial to the host country since they add to its foreign reserves.

6 Graduate students who fail to return to their country represent a net benefit to Canada since their undergraduate studies were financed by their home countries.

7 It is rather reasonable to assume that the foreign students who come to Canada are rather committed to their studies and wish to finish as soon as possible. If this is true then Canadian students benefit from their presence since they provide an intellectually competitive environment for them. Further, if their commitment has spillover effects, then Canadian students will be more committed and society will benefit from them graduating faster than they otherwise would have.

Finally, on the cost side one could argue that the low utilization rate at the graduate level (especially in the 1970s) implies that the marginal costs are rather low.

These perceived benefits will now be analysed in turn.

Argument #1: 'Canadian students benefit from contact with foreign students since this gives them the opportunity to work with and to understand people from other cultures and countries.'

Given that Canada is an ethnic mosaic, with many first- and second-generation immigrants (24 per cent of the Ontario residents are born outside Canada; Census 1981), this argument does not seem to be applicable here. This argument, I believe, was intended for countries with a homogeneous population. But even if it were true, since the benefits are received by the students and not the 'taxpayers' (society minus faculty and students) it should be the Canadian students who subsidize foreign students. Furthermore, if the argument were true then subsidies should also be given, for example, to those who travel for pleasure since they too learn about other cultures and countries. We can safely conclude, therefore, that this argument could not have been in the Ontario government's mind.

Argument #2: 'The viability of some programs in some universities depends on foreign students in that their presence encourages more diverse programs than otherwise might have been the case.'
This argument will be discussed in conjunction with the argument that in some faculties/universities the marginal costs of additional students are rather low. These two arguments are in fact contradictory. That is, wherever programs exist because of the presence of foreign students, the marginal costs are quite high and not low.

Given the recent proposals for restructuring the university system in Ontario, one can see that programs that are not in high demand by Canadian students could be offered only at selected universities. Departments with low utilization rates (especially at the graduate level) could then be eliminated at some universities, with considerable savings. These savings would be mainly in the form of faculty time and regarding use of the facilities.

Even if the marginal costs (in accepting foreign students) to a university are almost zero, however, this is not true for the rest of the society. That is, given that the university receives an amount of money per student enrolled, the costs of an additional student to the 'taxpayer' (society minus faculty and students) is not zero. Further, since this additional money will have to come out of taxes, one would also have to include the effects of increased taxation on the labour supply and hence GNP.

Therefore, if it were true that the marginal costs of foreign students were low at some faculties/universities, this would mean that these universities should not receive any money for these additional students. It seems, then, that these two arguments could not have been motivating factors for the Ontario government.

Argument #3: 'The education of foreign students is a means of fostering good relations with other countries. Further, in the future these students will tend to do business with Canada since they have become familiar with our technology and culture. In addition, today's students from the LDCs will constitute tomorrow's governing elite there – one can expect that their experience here will influence their attitudes towards Canada.'

Although the above argument may or may not be correct (lest we forget the revolutionaries of the LDCs) the important question here is not whether education advances good relationships and trade, but rather whether or not it is the best way of achieving these objectives. The answer is probably no, since there are more direct ways of achieving both. For example, one may advance good relations by helping a country's government with economic and political problems, providing direct income transfers to the country's citizens, direct transfers in kind (e.g., through buying Canadian-built cars for a selected number of the country's citizens), etc.

With respect to Canadian technology, a better way to insure that it is used by other countries would be to subsidize these nations' initial purchases of Canadian technology rather than subsidize foreign students in hope that they will one day use it. Furthermore, it is not clear that Canadian universities use mostly Canadian technology. My suspicion is that they use mostly American, Japanese, and European technology (for example, for mainframe computers, etc.).

Finally, recent discriminatory practices by certain Canadians make the argument very questionable that foreign students' attitudes toward Canada will be favourable due to their good experiences here. For example, in the fall of 1979 the CTV program *W5* aroused public concern by claiming that a large percentage of students in some faculties were Asian in origin and therefore were depriving Canadian students of access to university education. In fact, all of the students were either landed immigrants or Canadian citizens. In addition, Tillman and Sunderji (1982, p. 7) mention that 'tales also abound of a "visibly foreign" student being refused accommodation. The recent debate over differential fees and the growing number of Chinese students has not been entirely free of racist undertones'.

It seems, therefore, doubtful that these could have been the arguments in the Ontario government's mind.

Argument #4: 'Foreign students in graduate programs provide both

skilled and cheap manpower as well as valuable international links for research projects.'
This argument is correct as long as there is an excess demand for researchers, i.e., as long as Canadian graduates are not sufficiently qualified to fill the available positions. Although this may have been the case in the early 1970s, in light of the recent high enrolment rates it is hardly an argument. As Table 8 showed, the number of Canadian full-time graduate students in 1981/2 was almost twice that of 1972/3. This argument, therefore, also could not have been in the back of the Ontario government's mind.

Argument #5: 'Foreign students contribute to the host country's foreign reserves.'
The extent to which foreign students contribute to Canada's reserves of foreign currency is unknown. Given our earlier-mentioned suspicion that a lot of them have relatives or work (illegally) in Canada, my guess will be that this contribution is not substantial. However, the important issue here is whether or not this is the best way for a country to increase its reserves. I doubt it.

Argument #6: 'Graduate students who fail to return to their countries represent a net benefit to Canada since their undergraduate studies were financed by their home countries.'
This argument definitely could not have been in the back of the Ontario government's mind for the following reasons. First, if it had wanted these students to stay, then it would not have made it impossible for someone to apply for the status of immigrant. (Actually this is a federal matter, but one hopes that the federal government has been responding to the labour needs of the provinces.) The 1978 (and 1973) Immigration Act is contradictory to the above argument. Second, this is again not the best way to attract highly qualified manpower in Canada. That is, one could offer to masters-degree and Ph.D. holders (not to B.A. holders who are undertaking graduate studies) financial benefits conditional on becoming Canadian citizens. Simply subsidizing a foreign student's graduate studies with the hope that he or she will remain in Canada in future hardly seems the right way to do it. Third, given the unemployment situation of the last few years of Canada's highly qualified labour force, it does not seem to me desirable to attract foreign professionals any more. Regarding this

TABLE 10
Employment picture after graduation by type of degree awarded in 1978

	Bachelor's (%)	Master's or Ph. D. (%)
Employment status, June 1978		
Working	85.4	84.8
Full-time	79.6	79.4
Permanent	(61.5)	(67.7)
Temporary	(14.7)	(9.5)
Part-time	5.1	4.6
Not working	14.6	15.2
Accepted job to start in the future	2.4	1.9
Looking for job	5.3	3.5
Not looking for job	6.8	9.4
Unemployment as a percentage of labour force, June 1978	8.4	6.4

SOURCE: Clark and Zsigmond (1981)

TABLE 11
Unemployment rates in Ontario (selected years)

	Total university graduates in Ontario (%)	Ontario labour force aged 20-24 (%)
1974	5.8	6.7
1975	7.4	8.6
1979	5.8	10.7
1982	11.2	18.7

SOURCE: Bovey Commission (1984), p.13.

matter, Table 10 presents some detailed employment figures for university graduates from an 1978 survey, while Table 11 presents unemployment figures for university graduates for selected years in Ontario.

Argument #7: 'Foreign students provide an intellectually competitive environment for Canadian students.'

Although this is a valid argument, the universities' policies with respect to admission requirements (and therefore the government's policy since it allows them to do so) do not in themselves support the hypothesis that this was an argument in the back of the government's mind. First, most Ontario universities accept into their graduate programs a student with a B average in his undergraduate studies (B average cannot be considered excellent by any standard). Second, there is no system of interviews or tests in place to ensure that we admit those students who best excel in their studies. Third, French-speaking universities do not always require a French proficiency test; and although the majority of English-speaking universities say they will only accept a student who receives a score of 550 or more in his or her English proficiency (TOEFL) test, half of those who officially cite 550 as the minimum mark will still accept students with lower scores.

Needless to say, many excellent foreign students are enrolled in Canadian universities. However, my point is that the institutions (and through them, the government) do not do much to ensure that this is the case. Therefore, this argument also does not shed any light on what might have been the Ontario government's rationale for increasing foreign-student fees by only 50 to 67 per cent of a student's full cost of education.

Since it was neither the price elasticity of demand for Canadian education nor the external benefits that foreign students provide, then what was the rationale for the Ontario government's policies (as well as the other provinces) towards foreign students?

It has been argued that Canada (being in a favourable position in relation to other countries) has a moral obligation to alleviate global inequalities through such means as providing training and research experience to students from the LDCs. This is an unconditional normative statement. It is unconditional in the sense that if you accept it, then you do not have to look for anything else in justifying the existence and subsidization of students from the LDCs in Canada. However, even if one accepts the above argument, one may still ask whether or not college and university education is one of the best means to achieve the above goal of global equality. I believe that the answer is yes. Although there are other programs that may help in eliminating inequality, such as direct income, food, and physical-capital transfers, such programs are only effective in the short term – they do not end poverty altogether for the people receiving aid. College and university education, on the other hand, apart from being complementary to physical-capital, are also the best means of acquiring wealth and upward mobility.

Yet a look at Tables 12 and 13 (see also Table 2 earlier) reveals that even here our policy has failed for three reasons. First, as shown in Table 2, 53 per cent of Canada's visa students came from countries with a similar or higher GNP than Canada's (i.e., U.S., Australia, Japan, New Zealand, and most of Europe). In effect, therefore, we subsidized mostly rich countries. Second, not all students from the LDCs were exempted from the differential fees and therefore our subsidy to them was not to the extent that the argument implies. Third, it seems to me that what these countries need are not arts graduates but rather graduates from applied professional schools, such as engineering, medicine, etc. Some of these schools, however, especially medicine, restrict entrance for obvious reasons. For example, Canadian medical schools' total enrolment is somewhere between 800 to 1,000 students a year (Statistics Canada, Cat. 81-204). If one was concerned with helping the LDCs then one would have made a provision that these schools accept more students.

CONCLUSIONS AND SUGGESTIONS

We finally come to the question, 'what should the policy of Canada/Ontario be with respect to foreign students?' The answer depends on one's objectives.

For example, if the objective were to make profits, the answer would be different than if the objective were for Canada/Ontario to act benevolently. Bearing this in mind, my recommendations are conditional on the objectives that I perceive as relevant. Here, I see the first objective as being the improvement of the quality of Canadian education and the second being the alleviation of world's inequalities.

Given the above objectives, the policy recommendations are as follows:

1 Those who come from underdeveloped countries should pay the same fees as Canadian students while those who come from developed countries should pay the full costs of their education (as long as this

TABLE 12
Visa students in Canada, undergraduate and graduate: selected countries

	1972/3		1973/4		1974/5		1975/6		1976/7		1977/8	
	Undergr.	Grad.	Undergr.	Grad.	Undergr.	Grad.	Undergr.	Grad.	Undergr.	Grad.	Undergr.	Grad.
Hong Kong	1,989	138	2,237	126	1,665	111	3,351	165	3,986	210	4,752	260
Japan/Oceania[a]	69	123	62	106	73	170	100	171	121	297	133	308
Europe[b]	1,349	618	864	548	1,329	646	1,937	897	2,704	991	2,908	1,291
U.S.	1,527	1,021	1,368	784	1,553	1,283	2,676	1,535	2,483	1,673	2,347	1,777
TOTAL	4,934	1,900	4,531	1,564	4,620	2,210	8,064	2,768	9,294	3,171	10,140	3,636
Total as % of total visa students	59.5	51.6	57.9	50.2	54.1	51.6	65.0	50.1	64.9	50.5	57.1	49.0

	1978/9		1979/80		1980/1		1981/2		1982/3		1983/4	
	Undergr.	Grad.	Undergr.	Grad.	Undergr.	Grad.	Undergr.	Grad.	Undergr.	Grad.	Undergr.	Grad.
Hong Kong	4,932	276	4,645	308	4,733	364	5,695	404	6,722	424	7,930	446
Japan/Oceania[a]	150	355	162	325	157	346	158	180	135	378	132	360
Europe[b]	2,651	1,388	2,389	1,392	2,394	1,546	2,361	1,593	2,444	1,653	2,300	1,542
U.S.	2,044	1,722	1,938	1,494	2,033	1,414	2,020	1,411	1,926	1,429	1,742	1,338
TOTAL	9,777	3,741	9,134	3,519	9,317	3,670	10,234	3,588	11,227	3,884	12,104	3,686
Total as % of total visa students	52.7	48.1	45.4	45.2	46.4	44.5	43.9	39.8	43.8	40.4	46.7	38.9

[a] Includes Australia and New Zealand only.
[b] Excludes Bulgaria, Czechoslovakia, Greece, Hungary, Iceland, Poland, Portugal, Romania, and Yugoslavia; includes the USSR.
SOURCE: The author would like to thank Tom Bird of Statistics Canada for preparing these numbers.

TABLE 13

Visa students in Ontario, undergraduate and graduate: selected countries

	1972/3		1973/4		1974/5		1975/6		1976/7		1977/8	
	Undergr.	Grad.	Undergr.	Grad.	Undergr.	Grad.	Undergr.	Grad.	Undergr.	Grad.	Undergr.	Grad.
Hong Kong	730	48	804	42	808	60	1,140	78	1,286	107	1,590	114
Japan/Oceania[a]	22	72	19	33	41	93	40	106	50	157	45	168
Europe[b]	973	229	544	168	1,008	283	1,415	340	2,123	406	2,074	484
U.S.	809	702	599	372	726	892	742	896	724	965	617	998
TOTAL	2,534	1,051	1,966	615	2,583	1,328	3,337	1,420	4,183	1,635	4,326	1,764
Total as % of total visa students in Ontario	58.8	53.6	55.6	47.5	57.4	53.7	60.5	51.5	61.8	50.1	60.1	50.9

	1978/9		1979/80		1980/1		1981/2		1982/3		1983/4	
	Undergr.	Grad.	Undergr.	Grad.	Undergr.	Grad.	Undergr.	Grad.	Undergr.	Grad.	Undergr.	Grad.
Hong Kong	2,068	123	2,396	135	2,753	164	3,665	189	4,404	191	4,739	188
Japan/Oceania[a]	55	101	68	169	67	187	64	86	57	206	55	194
Europe[b]	1,778	530	1,415	528	1,320	598	1,438	670	1,523	647	1,415	571
US	447	987	464	808	474	756	527	766	497	731	437	671
TOTAL	4,348	1,741	4,343	1,640	4,614	1,705	5,694	1,711	6,481	1,775	6,646	1,624
Total as % of total visa students in Ontario	59.0	47.7	53.6	47.2	46.6	46.0	43.7	40.6	44.5	41.9	47.9	43.0

[a] Includes Australia and New Zealand only.

[b] Excludes Bulgaria, Czechoslovakia, Greece, Hungary, Iceland, Poland, Portugal, Romania, and Yugoslavia; includes the USSR.

SOURCE: The author would like to thank Tom Bird of Statistics Canada for preparing these numbers.

cost does not exceed those in the U.S. or UK). Exemptions should be made for government-exchange or sponsored programs.

2 To achieve a fair representation from all countries, the recommendation put forward in 'The Right Mix' (CBIE 1981b) of imposing geographical quotas seems desirable. Further, to ensure that foreign students do not displace Canadian students, an upper limit should be set on their total number or on the percentage they are of the total student population. However, one must keep in mind that the argument of displacement does not seem to hold. As Table 1 indicated, the ratio of visa students to the total student population in Ontario was approximately 2.8 per cent at the undergraduate level and 9.4 per cent at the graduate level for 1972-77, while it increased to 4.1 per cent and 12.6 per cent respectively during 1977-82. Although these numbers are increasing, they still hardly support any displacement argument.

Fears also have been expressed (Tillman and Sunderji 1982) that quotas may result in retaliatory measures from countries such as the U.S. These fears, however, seem unfounded. The Canadian students who go to the U.S. not only pay much higher fees than American students in Canada pay, but they also go through a screening process. Screening operates on a similar basis to a quota system. Further, given the high quality of those who are accepted, it may be in our own best interests if the U.S. retaliates and rejects these Canadians.

3 Decisions with respect to foreign students should not be left to individual institutions. Rather, they should be made by the federal government. There are three reasons for this proposal. First, given our university-financing schemes, it is in the administrators' interests to accept as many students as possible without considering the effects of their actions on other institutions and/or on the 'taxpayers'. Second, since universities, through lobbying, may affect provincial policies, provinces will be caught in a 'prisoner's-dilemma' situation with perhaps negative effects on the taxpayers. Third, in the case of quotas, someone will have to supervise and co-ordinate enrolment. Although, as we mentioned earlier, there does not seem to be any displacement of Canadian students, recently York University, for example, had to reject about 1,400 eligible applicants due to limited space. Given the fact that many foreign students were registered, if one had co-ordinated their enrolment and spread them through other universities, this problem could have been avoided.

4 A sophisticated, detailed system of interviews, similar to the American one should be instituted to ensure that the best possible students are admitted into Canada. Further, this system could provide valuable statistical data about students' backgrounds.

5 If a system of interviews is instituted then priority could be given (in case of excess demand) to those with excellent academic records, low family income, etc.

6 At the graduate level, the tuition-fee system should be flexible and responsive to the demand and supply of students in different faculties.

7 Students from the LDCs should be exempted from the restrictive policies of the medical and other professional schools. One thousand medical students across Canada seems to me to be far below the capacity of the system.

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University enrolments: challenging popular misconceptions

David K. Foot

INTRODUCTION

We all saw how the declining enrolment in elementary schools in the early 1970s was followed four or five years later by declining enrolments in secondary schools. By the end of the 1970s we in the university system were all lamenting that we would be next. Further, at that time there were professional publications (for example, Science Council of Canada 1979) and a couple of studies by Statistics Canada (1979; see also Clark, Devereaux and Zsigmond 1979) that lent considerable support to this view.

But what happened? University enrolments in Ontario went up 6.3 per cent in 1980/1; up another 3.7 per cent in 1981/2; up 5.4 per cent in 1982/3; up 2.4 per cent in 1983/4; and are still going up in 1984/5. Back in 1981 I argued that enrolments were going to continue to rise (Foot 1981:37-63; also Foot 1982:ch. 5). That is again my theme for today.

There are two fundamental differences between the elementary-secondary system and the university system that invalidate the naive translation of one system to the next. First, while education is compulsory in the elementary system and for most of the secondary system, it is purely discretionary in the postsecondary system. Second, few people return to school at the elementary- or secondary-school level. Rather, it is mainly the postsecondary-school system that benefits from the drive for continuing re-education.

A more comprehensive approach toward university enrolments in the future would have to take into account both the reasons why

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people decide to enrol in postsecondary institutions and the evolving nature of the postsecondary education process itself, as it relates to, for example, part-time, graduate, and continuing-education studies. Basically what I want to do here is outline the findings of the enrolment projections that have been based on such an approach.

The framework of the above approach is the standard identity noting that enrolments in any educational system can be expressed as a participation rate times a source population. If this is done for every single age-sex group and then added up, total enrolments for the system are obtained. That is,

$$ENR_t^j = \sum_{i=1}^{N} P_{it}^j \, POP_{it}$$

where

P_{it}^j is the participation rate in system j for age-sex group i at time t

POP_{it} is the source population for age-sex group i at time t, and

ENR_t^j is the total enrolments in system j at time t.

Using this framework it is also possible to focus solely on enrolments at the undergraduate level, or on part-time, full-time, graduate, or continuing-education students. It is also possible to modify the formula. Graduate students, for example, can be scaled up because they represent more full-time equivalents (FTEs), and part-time students can be scaled down because they represent less than FTEs. Essentially, however, the framework remains as the simple identity of a participation rate times a population inclusive of all age-sex groups. We can therefore see that increasing populations will lead to increasing enrolments; decreasing populations to decreasing enrolments; increasing participation rates to increasing enrolments; and decreasing participation rates to decreasing enrolments. Very basic, very clear, very simple, but still very necessary. I will now discuss each of these two components in more detail.

POPULATION IMPACTS

Figure 1 shows the estimated 1984 population of Ontario by five-year age-sex groupings. This can provide the focus for analysing the first component of enrolments, namely, the population component.

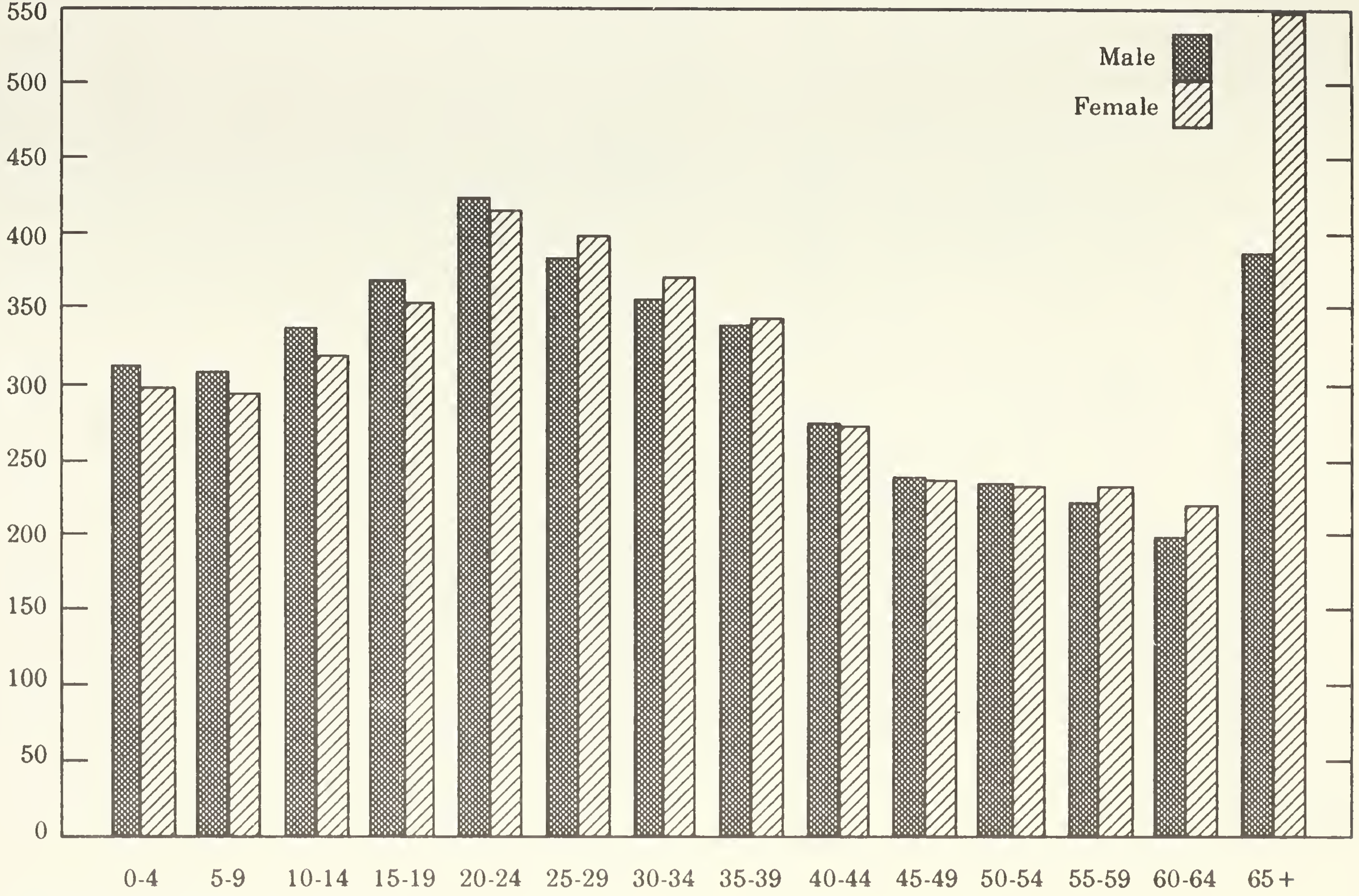
First of all, as we stand today the baby-boom generation extends from age 18 to age 38, and in Ontario includes more than 140 thousand people in each individual year-age cohort. Those born at the peak of the baby boom in Ontario are now aged 21, and the largest five-year age group in Ontario today is the one covering ages 20 to 24. This group is now in the university system: we have seen it as our classes have mushroomed and enrolments have continued to rise. However, what you see following is much, much smaller age cohorts. In fact, the 15-to-19 age cohort is more than 100-thousand potential students smaller than the current 20-to-24 age group. There is no doubt that what we are witnessing here is the very last of the baby-boom generation completing their secondary-school education and beginning to emerge in the university environment.

Above the 20-to-24 age group lie the rest of the baby-boom cohorts, right through to the 35-39 age group. Here are our potential graduate students. We may not have the funding necessary to take advantage of them, but the pressures on graduate enrolment should be increasing. Here are also our potential part-time students, another part of the university system which should be subject to increasing enrolment.

Let us now look in a little more detail at the nature of the university system at present. In Table 1, preliminary data for 1983/4 show that in Ontario, a little more than one-half of all university students are full-time undergraduates. Nearly a third are part-time undergraduates. Approximately 7½ per cent of all university students are full-time graduates and another 4 per cent are part-time graduates. Overall, then, we find that 65 per cent of students in university are full-time and that about 35 per cent are part-time. These proportions are gradually going to change, and the future looks most promising in relation to those aged 25 and over. In Ontario, three-quarters of our part-time undergraduates are aged 25 years and over. Of our full-time graduate students, three-quarters are aged 25 years and over. If you think that's high, of our part-time graduate students, almost 95 per cent of them are aged 25 years and over.

FIGURE 1

Estimated population by age and sex, Ontario, 1984 (thousands)



SOURCE: Author's own calculations.

TABLE 1
University enrolments by age, Ontario, 1983/4[a]

	Less than 25 years	25 years and over	Total[b]	25+ as a percentage of total[b]
Undergraduate				
Full-time	144,193	17,191	161,384	10.7
Part-time	21,780	63,585	85,365	74.5
Total	165,973	80,776	246,749	32.7
Graduate				
Full-time	5,220	15,351	20,571	74.6
Part-time	769	11,153	11,922	93.5
Total	5,989	26,504	32,493	81.6
Total	171,962	107,280	279,242	38.4

a Preliminary data.
b Total excluding age not reported, as follows: full-time undergraduate, 208; part-time undergraduate, 415; full-time graduate, 128; part-time graduate, 20.
SOURCE: Statistics Canada (forthcoming).

If one takes the same approach as the Science Council and Statistics Canada did in the late seventies and concentrates only on projections for the full-time undergraduate population, that is, on only 57 per cent of the total student population, then one gets a very, very different view from what has been implied above. Although it is true that the 18-to-24 age group population is not going to be growing, today's 20-to-24 years olds, the biggest age group, will in the years ahead become our graduate students and our part-time students. Even though the number of full-time undergraduates will probably decline in the short term, there is still a great deal of potential for growth in the number of graduate students, provided, of course, that we can get the funding for them. There is also great potential for growth in the number of part-time students, if only our administrations and our classes can adapt in that direction. Of course there are many reasons why we may not be able to achieve this. There are external influences, such as the under-funding that I have referred to, especially at the graduate level. There are also internal influences, such as the attitude that it is somehow inappropriate to be teaching part-time students who are continuing education. Both internal and external concerns must be confronted if we want to achieve what the demographic projections tell us we can.

PARTICIPATION-RATE IMPACTS

That is only one-half of the issue – the population. What about the participation rates? Overall participation rates across all age groups peaked in 1976, declined extensively through the late seventies, and then in the early eighties started to come back up again. How can we account for this? First of all, in the context of consumption theories of educational demand, two variables are immediately suggested – income and price. If incomes go up then demand goes up, and if price goes up demand goes down. Essentially what we have seen is strong income growth through the sixties and early seventies, followed by the tailing off of income growth in Ontario in the late seventies and into the eighties, and this goes a long way towards explaining the decline in participation rates. In addition, as prices rise more than fees, university fees in real terms have declined over the past 20 years. This has led to an increasing demand for education. However, as provincial grants began to dry up in the late seventies and early eighties we saw a modest fee increase in real terms that led to a decrease in participation rates at that time.

If we move from the consumption approach to look at the situation in terms of university education as an investment good, then one of the variables that is suggested as being terribly important is the unemployment rate. Most of the costs that students incur can be seen as opportunity costs, as the forgone earnings that are no longer received when someone chooses to go to university. As unemployment rates rise, then, participation rates are also found to rise. Indeed, the increase in unemployment rates is probably one of the major determinants of the current increase in participation rates. Once the youth-unemployment problem is resolved, and I am on record as saying it will solve itself without government intervention (Foot 1984:7), then we can further expect to see a modest downward pressure on participation rates.

There is an additional variable, one which my own research suggests is the most important, and that is a variable that represents cohort size (Foot and Pervin 1983; see also Vanderkamp 1984). In recent years we have 'flooded' the market with bachelor degrees. Once the market was flooded the relative wage and the relative return to a postsecondary education was depressed. If you depress the relative return to a postsecondary education, people don't want to come to university so much anymore. Not surprisingly, by the end of the seventies people were saying, look, postsecondary institutions aren't delivering the goods anymore, the market isn't valuing their product. Consequently, participation rates fell.

The number of degrees awarded in Ontario peaked in 1977/8 and it has been declining ever since so that today we are no longer flooding the market with bachelor degrees. And, in fact, participation rates are beginning to come back up.

When you look ahead into the eighties and into the nineties we see smaller cohorts coming into the system. That means that bachelor degrees, or at least recent degrees, will become more and more of a rare commodity. This in turn will mean that the relative return to a degree will turn around and start to rise. By the 1990s I can just hear people saying, 'Ah, the universities heard our message and they responded and now they are producing a decent product again and the market is valuing it more'! We can expect, then, that participation rates will continue to rise as a natural consequence of the cohort effect. It will be offset somewhat by declining unemployment rates, and accentuated somewhat if we get some real income growth back in the province. It will be again offset somewhat if provincial governments don't give universities enough money so that they have to continue to increase their fees by more than inflation. By and large, however, decreasing cohort-size will be the main reason for the increase in participation rates.

My own analysis suggests that participation rates will increase by approximately 20 per cent, which will almost exactly offset the roughly 20 per cent decline in the size of the population cohort that's coming into the system. Add to this the expected increase in graduate and part-time enrolment and it seems abundantly clear that we are unlikely to see declining university enrolments over the next 20 years.

CONCLUSION

Are we going to be our own worst enemies and continue to prepare for declining enrolments? Or are we finally going to recognize that we are dealing with a product that is entirely different from those of the elementary-secondary or even community-college systems? We are dealing with a product where people can choose to come or not to come. We are dealing with a product that can provide graduate education and continuing re-education over a lifetime. Universities are unique institutions in that regard, as well as in many other regards. While population aging is likely to diminish the full-time undergraduate population, that will be at least compensated for by increasing the relative importance of part-timers and graduate students.

The recent turnaround in enrolment rates didn't surprise me and I believe that this trend is going to continue through the eighties and into the nineties. Universities may not be the number-one growth industry, but their future on the enrolment front looks very bright indeed.

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Discussion

QUESTION: David Stager spoke this morning of the importance of factors such as family background and particularly the level of university education of our parents. Would this mean we are going to see an echo effect in the children of the baby-boom generation sometime down the road? And when would that be likely to hit us?

DAVID FOOT: I couldn't agree more with my colleague David Stager. His comments make my optimistic approach look even more optimistic because people today have indeed been well educated. The echo effect of the 20-to-24-year age group will occur roughly 20 to 25 years from now, in the first decade of the next century, which is when you will see that effect on participation rates and enrolments.

QUESTION: You mentioned some internal problems in post-secondary education – that it wasn't considered appropriate internally to train graduate students. Could you expand on that?

DAVID FOOT: I said part-time students and not graduate students, and that was just interjecting my own perception of university administrations, a view which may be a little more out-of-date now than it was three or four years ago. My personal perception has been that the part-time undergraduate student has been considered of secondary concern and has been largely ignored from the point of view of planning. If that view is still held, it's time to dispense with it, because part-time undergraduates are one of the growth areas for the eighties and nineties.

BEN WILSON: A few years ago we commissioned John Porter to look at the part-time enrolment at Carleton University. John thought at the time that he had found a new source of undergraduate students. I think he was quite dismayed when he finished the study to find out that what they had been doing in many respects was recycling to a different discipline more mature, part-time students who already had a pretty good university-level education. There would seem to be quite different policy implications attached to this more educated part-time student than there is to those who were by-passed the first time round. Is there any evidence amongst your statistics to show how many of the part-timers over 25 are totally new to the system as opposed to those who are not?

DAVID FOOT: I personally haven't investigated that issue, so the simple answer to your question is no, there is nothing in my statistics that would help clarify that situation. Quite candidly, I don't really care and I'm not sure that we should care. Maybe a government wishes to care if it's worried about accessibility at different levels and only wants to fund a limited number of spaces. But speaking as a university professor, I think the university system should not consider whether it is 'recycling' existing people or whether it is obtaining people for the first time. In fact, I would argue that giving the engineering student an M.B.A., for example, is a very positive thing, especially if there is a demand for M.B.A.s. You used the word 'recycling', which has negative connotations. I'd much prefer 'retraining' as this is what, I would argue, we are doing.

QUESTION: If we're trying to equate participation rates with funding I think we are dealing with another story. It's alright to have the same number of students in terms of enrolment, but if their status changes then you are ending with a smaller number of FTEs. Knowing that many provincial systems are funded according to the number of FTEs, are you suggesting that not only should we try and convince governments that participation rates are increasing, but also that the budgeting formula should be changed?

DAVID FOOT: No, I wasn't suggesting that. Everything I have said with regard to enrolments however, applies to FTEs. The decline is a little greater with respect to FTEs but it doesn't occur until the 1990s. If you want documentary evidence of this you can look at the Council of Ontario Universities (1983) projections[1], for example, and I would argue they are even modest projections because of their participation rate assumptions. On the matter of the budgeting formula, maybe we ought to increase the funding equivalent for our part-time undergraduate students.

QUESTION: I wonder if you could comment for me on the difference between the participation rates in Ontario and those for other provinces as well as other countries.

DAVID FOOT: I cannot remember exactly how Ontario participation rates compare to the other provinces, but certainly our participation rates are way, way below those in the U.S. for postsecondary education. While we probably wouldn't want to duplicate their system of postsecondary education, it does suggest that we have a lot of room as far as increasing participation rates. There does not seem to be any ceiling that we're going to be running into, at least over the period of the next 20 to 25 years, but to the extent that you can look to other systems to argue that there is no upper limit, at least in the near-term future, we can still expect participation rates to continue to rise.

NOTE

1 Council of Ontario Universities (1983) *Participation Rates and Future Enrolment in Ontario Universities* (Toronto: COU)

PART III: OPERATIONS

Rationalizing the university system

John C. Wilson

INTRODUCTION

It will be rapidly apparent that this is not an academic paper. It is an attempt to bring an outside, business-oriented point of view of someone peripherally involved with Ontario universities to the general discussion of the major functional problems now facing these universities.

The paper has two underlying premises. I shall discuss each in turn.

The first is that, apart from one-time funds to assist in an adjustment period, the government of Ontario will not likely fund Ontario universities at appreciably higher levels in the future. There may be compelling arguments that the government should rethink its priorities or further tax Ontario citizens in order to allocate more funds to the universities. And there may also be equally compelling arguments that the universities are already overfunded. Whatever the arguments, the government appears to have signalled rather clearly that it will not provide significant additional monies for the universities.

Unfortunately, it is also difficult to believe that any substantial additional funds are likely to be available from other sources. Public fundraising has become extremely competitive. Governments at all levels have reduced grants to educational, cultural, and philanthropic organizations and they in turn are appealing to the public at increasingly frequent intervals.

Canadian corporations are already exceptionally good corporate cit-

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izens and while there may well be new ways available for corporations and the universities to work together to their mutual benefit, it is unlikely that such collaboration will improve the present funding situation.

There are undoubtedly economies available in individual universities, but as they have been operating on limited funds for some years it is difficult to believe that there are still efficiency gains to be made that will be sufficient to meet overall needs. In other words, it is most unlikely that the universities can save their way to real health.

The most sensible course at this point appears to be to accept that there are not likely going to be appreciably greater funds available in the future for the universities and to implement a rational plan to deal with this.

The second premise of this paper is that the present funding levels are resulting in operating policies that reduce the quality of university education generally and gradually destroy the hard-won base of excellence in our best universities. Again, there may well be arguments against these claims, but there appears to be sufficient unanimity of opinion to accept them.

One of the most disturbing problems is the fact that for fifteen years or so it has not been possible to maintain the universities' facilities and equipment in a reasonable condition, not to mention a technologically up-to-date condition. We have been living on our capital in this regard for too long. It is very clear that the cost of bringing these assets up to a reasonable condition now dwarfs the operating-fund deficiencies.

Again, the most sensible course is to face the situation squarely and to develop and execute some form of rationalization plan. We cannot sit still and let the erosion continue.

In the simplest sense, the above premises lead to the following assumptions:

- Funding limitations are damaging in the present operating structure.
- There is no indication that the present limitation of funds is a temporary phenomenon.
- A way must be found while operating within the current level of funding to maintain a high quality of education and a solid base of excellence.

- Major change is required to end the present situation once and for all.
- Priorities must be established to ensure the preservation and development of those activities that are critical to maintaining a high quality of university education in the province.
- Some activities and some institutions are going to have to be reduced in scope or sacrificed completely to protect others.
- Whatever the detail of the necessary change, it must be in the form of a comprehensive plan that encompasses the whole of university education in Ontario.
- As the chief source of funds, the government of Ontario must endorse any rationalization plan at the outset and establish the authority to implement the plan.
- Any such comprehensive plan will inevitably have to impose an authoritative system where none exists now; equally inevitably, this system will directly reduce the highly valued independence of the universities.

In my opinion, the *Report* of the Committee on the Future Role of Universities in Ontario (the Fisher Committee) came to much the same conclusions in 1981. The Fisher Report reluctantly concluded that if significant additional funds were not forthcoming there would have to be a major restructuring of Ontario universities. If it came to such restructuring, the Fisher Report proposed a system where:

- Ontario would have one comprehensive university capable of offering a very broad range of high-quality programs at all degree levels.
- There would be not more than four full-service universities offering a more restricted range of high-quality programs at all degree levels.
- There would be four or five special-purpose institutions, including some designed specifically to serve northern Ontario.
- Some of the remaining universities might have to be closed; those that remained would offer high-quality undergraduate programs in arts and science and perhaps the early years of other high-demand programs such as engineering and business.

It is fair to say that while the Fisher Report was considered by many observers to be an extremely useful, thoroughgoing report, it was not well-received across the breadth of the Ontario-university community.

The primary conclusion the outside observer reaches today is that the present problems cannot be solved by tinkering. Again, it seems very clear that an effective remedy can lie only in major change. And it seems equally clear that this change means some downscaling of the universities' activities. Ontario must have a university system it can live with in the future, a system which does not endanger other priorities.

If rationalization is really attempted, choices will have to be made between institutions, faculties, and courses. Thus, rationalization's greatest impact will be on the general policy of 'accessibility' of university education to students throughout the province. As the Fisher Committee pointed out, Ontario's policy has been to accommodate student demand, not to control or shape it. Whether change of that policy is digestible by the present government or by any government is obviously questionable.

The primary purpose of this paper is to show government that there is at least some strong opinion that supports the need to rationalize the organization and shape of university education in Ontario despite the fact that such rationalization will likely be painful. Ways that rationalization could be efficiently implemented will also be examined.

This paper does not attempt to answer the question of what specific rationalization is required in Ontario universities. Again, what I feel I might comment on usefully is how implementation of any rationalization decisions might be carried out. However, I am not under any illusion that I will manage to effectively hide my own biases and conclusions in the process of outlining what rationalization will have to consider.

The reasons for this limited approach are as follows:

- Rationalization recommendations require a detailed knowledge of academic institutions and academic problems (which I certainly do not pretend to have). As suggested to the Bovey Commission, the models proposed by the Fisher Report offer an excellent base for consideration.

- Where major changes are likely to seriously affect the aspirations and welfare of people and organizations, it is particularly wise to agree first in principle on how those directly affected will be treated before determining the final details of the specific changes to be made.

– I believe that fair and equitable ground rules must be developed for dealing with the major concerns of any interest affected before sensible action can be readily agreed upon and pursued by the decision-makers.

FUNDAMENTAL CONSIDERATIONS

While rationalization is generally accepted as the process of 'making conform to reason', there is obviously need at the outset to identify what is meant for these purposes by 'reason'. In this paper, the process of rationalization means the process of organizing the operations of the universities of Ontario to ensure the efficient use of their assets and resources for a common set of objectives.

Also at the outset it needs to be re-emphasized that the 'Ontario university system' is not a system at all. It is certainly not a system in the sense of being 'a set or arrangement of things related so as to form a unity', the usually accepted definition of the word 'system'.

Ontario universities appear to have very little unity in the sense of having connecting mechanisms which are important to their academic or operating management. A great deal of effort has been spent by both government and the universities in devising mechanisms to ensure unity and better co-ordination of the development and growth of university education, but the result has not been successful in the sense that provincial bodies with executive authority have not been established. However, the effort has established highly useful, representative advisory bodies. The Council of Ontario Universities (COU) and the Ontario Committee on University Affairs (OCUA) provide advice on what new graduate and undergraduate programs should receive funding support as one of their key activities.

The Ministry of Colleges and Universities (MCU) has obviously exerted its influence to ensure rational growth, but it has been understandably careful not to be viewed as attempting to enforce academically or socially limiting patterns. The Ministry has controlled capital grants as one effective means of exerting control on the growth of activities, but this power is somewhat reduced by the fact that universities can raise money from their alumni and the general public for capital expansion more easily than for operations.

Differences and similarities in universities

All Ontario universities appear to subscribe to essentially the same public-service objectives. However, there are important differences between them that affect their operating policies and objectives:

- Ontario universities are 'owned' by and report to widely different types of organizations and constituencies.
- They vary enormously in the size of their student bodies, faculties, and assets.
- They are highly differentiated in the range, scope, and quality of their teaching activities.
- The value and general physical state of their facilities and equipment varies greatly.
- They have a wide range of governing systems.
- The objectives, extent, focus, and quality of their research activities also differ widely.
- They vary from being long-established with solid public support to being relatively newly-founded with as yet undeveloped or limited support.
- While none of them are rich or heavily endowed in the Harvard or Princeton sense, the extent (if any) of their financial independence varies greatly; where there is any significant endowment, the conditions of endowment frequently limit the type or scope of their activities.
- And finally, they are widely distributed geographically and relate to a variety of sizes and types of community. Some clearly serve national needs; others are essentially local resources.

The most important similarities of these institutions for my purposes here can be summarized as follows:

- They all draw the bulk of their operating income and much of their resources for capital projects from the same government sources.
- The bulk of their research funds is also drawn from essentially the same government and foundation sources.
- They recruit their faculty and other professional and technical staff from essentially the same sources.
- As would be expected, a good part of their students are drawn from their local communities; however, they all endeavour to serve the

whole Ontario-student population's demand for university education and training.
- They are the major source of university-trained entrants to the Ontario workforce; that is, they deliver well-educated and trained people to meet essentially the same general market demand.
- While their faculty members provide a great deal of local community service, their public service is in large measure provided to the same provincial- and federal-government organizations, task forces, and to the same provincial and national institutions as well as private organizations in the province.
- When raising funds, apart from their alumni, their appeals are aimed at the same large national corporations and foundations.
- And finally, they all have a desire for recognition and growth.

What we have then in Ontario is an extremely loosely connected group of ambitious, widely varied, and highly independent institutions that in a general sense serve the same public purposes and draw the bulk of their financial support from the same general sources.

It is important to emphasize that these institutions also compete vigorously with each other for students, faculty, and financial support.

Universities and community colleges

The dividing line between the services offered by the community colleges and the universities is reasonably clear in the formal degree-granting sense and in the universities' commitment to research and teaching at advanced levels. However, there is considerable duplication between the lower levels of the university courses and community-college courses in many fields. This overlap is more significant in some faculties (and in some universities) than in others.

The 22 community colleges have more than 100,000 full-time students, of whom 75 per cent are in postsecondary courses. The role of the community colleges in the training of junior levels in many professional and technical fields has changed from time to time and appears likely to continue to change, particularly with the rapid growth of technological development. Because of this, the areas of overlap are also likely to change in the future. And it is likely that the overlap will grow rather than shrink.

If the community colleges did not serve the technical and professional fields as they do now, it is difficult to see how the universities (as the only other significant postsecondary educational resource in Ontario) would be able to avoid having to fill almost all of the demand for professional and technical training. Private commercial institutions could take some of the load, but would be unlikely to adequately cover most of it.

It is my view that the role of the community colleges is inextricably linked with the role of the universities and cannot be ignored in any rationalization planning. In fact, it may well be that the resources and economics of the community colleges offer a most valuable mechanism for solving some of the universities' problems. In this regard it must be pointed out that the community colleges are also suffering from overcrowding and underfunding, but that there may still be some flexibility in their activities. While not directed at the community colleges, this paper's recommendations can likely be readily adapted to include them.

WHAT RATIONALIZATION MIGHT REQUIRE

It is obviously necessary to first project what rationalization might include in order to examine what its implementation might require.

As pointed out earlier, the Fisher Report provides a carefully researched picture of the kinds of organization structure as well as the kinds of changes in activities that might be undertaken in order to rationalize Ontario universities. Here, I will assume a 'worst case' scenario from the point of view of those affected; that is, that rationalization of Ontario universities will likely consist of major changes that include downscaling of functions and organization, consolidation of activities, and reductions in student populations. As this will undoubtedly mean an unequal sharing of what is available, it will be necessary to identify what must be preserved and nurtured and what must make do with less than at present.

First, the underlying reasons for rationalization bear directly on what rationalization measures might be taken. The need for rationalization appears to stem from a great many factors of which the following are particularly important:

- The extensive building of universities in the 1960s in response to the anticipated explosive growth of university applicants expected from the baby boom of the 1950s: the growth came, but was followed by a decline. The present overall capacity is undoubtedly greater than we would build today to meet expected aggregate demand.

– As Ontario universities are for all purposes effectively independent of any co-ordinating authority, not surprisingly they have had unco-ordinated growth. We do not necessarily have the optimal mix of assets or make the best use of available teaching resources.

– The government's adoption of a policy of 'accessibility' has come to mean a virtual guarantee of:

a) availability of university education in every major centre;
b) all such centres offering a wide range of courses;
c) university education at minimal cost for everyone regardless of the institution or discipline; and
d) an assumption that university education can benefit anyone who is able to struggle through secondary education.

– The university-funding system is essentially on a per capita student-grant basis for operating funds (as contrasted with capital funds); that system inevitably encourages the registration of larger numbers of students when operations experience strong cost pressure. As student populations have declined, there has been heated competition for students and some universities have been forced to lower entrance qualifications to recruit sufficient students to carry their institutions. This has very likely lowered both entrance standards and the quality of the graduates to some extent.

– There has been major growth in the range and scope of courses offered; graduate courses have proliferated as much as undergraduate courses. This is in part a response to the heightened competition between universities, but it also stems from increasing technological complexity as well as the natural pride that universities take in offering a full range of academic disciplines.

There is an added danger for the universities. The lack of available government funding is affecting a great many fields besides higher education, including the arts, scientific research, and a variety of private social services. These restrictions have forced the great majority of universities, arts bodies, and the like to make public appeals for funds. Such appeals are increasing daily in frequency – and they all are having a more and more difficult time being successful because of the increasing competition. This will certainly affect the amounts of money that universities routinely seek from their alumni and others. It makes it even more necessary for the university community to use its resources rationally.

The above indicates that Ontario universities may now be suffering from the following problems:

- Universities have more students than can really benefit from a university education.
- Some universities are likely trying to offer too much relative to their resources and as a result are offering much poorer quality teaching on average than is desired.
- There is very likely a substantial amount of uneconomic and questionable duplication of faculties and facilities across the province.
- Centres of excellence are being starved and damaged in order to spread available funds across an over-expanded system.

Assuming that the foregoing is a reasonable analysis of possible ills of the system, in the 'worst case' scenario rationalization will result in some form of co-ordinated system being imposed by a government-backed authority which determines some or all of the following:

- what courses and programs should be supported across the province;
- where courses will be offered;
- the best match of enrolment levels to the likely demand levels for graduates in each discipline;
- what entrance standards should be set;
- what centres of excellence must have priority for funds;
- the allocation of financial resources between staff, facilities, and support costs;
- guidelines on key financial factors, such as salary, wage, and fringe-benefit increase levels; and
- the allocation of capital resources.

A rationalization program could well result directly or indirectly in a centralized authority imposing some or all of the following:

- The closing down or building up of specific teaching activities (courses, faculties, programs) in specific universities.
- A reduction in the number of students in specific institutions and in specific courses or programs.
- A reduction in the accessibility of graduate programs.

- The sharing of teaching, facilities, and equipment between institutions.
- Changes in how student-fees are structured.
- A revised funding formula not exclusively tied to enrolment.

If such changes came about, a whole range of people and organizations could be directly affected, more often than not negatively, including:

- students, both undergraduate and postgraduate;
- teaching staff, at all levels;
- management and professional administrative staff;
- support staff; clerical, administrative, technical, maintenance, etc.;
- faculties in particular and universities in general; and
- communities.

Put in the harshest sense, students might find access to courses and institutions restricted and their course options reduced. They might have to go to distant universities and they might find their fees raised. Teaching staff might become redundant and be laid off, retired early, or have their remuneration and perquisites changed; their courses might disappear, or their promotional opportunities might be narrowed. Management and administrative positions might also disappear; they might suffer the same reduction in scope and loss of opportunity and the same numbers of layoffs, early retirements, and downgradings. Support staff might face the same as well.

WHAT WILL BE FAIR

If rationalization is going to work, it must be based on principles that ensure fairness. In my view, such principles must include what is outlined below.

A rationalization authority

Rationalization must regulate and involve all of Ontario's universities. If a rationalization plan is adopted, a university cannot be expected to participate and co-operate unless it is fully satisfied that others will do so as well and that there will be some body monitoring the process.

While a 'basic plan' may be able to sketch out the fundamental steps and policies of rationalization, there will certainly need to be some ongoing authoritative body to deal with unexpected and changing conditions.

The Fisher Report commented on the usefulness of a 'University of Ontario' as a means of centralizing authority. That might well be an effective mechanism for at least part of the system; however, such a mechanism is really only one form of central authority, if perhaps a more digestible one for those affected.

It has been debated that given a clear plan the universities could put it in place themselves without the imposition of an authority for the purpose. That might be possible if rationalization were meant to foster equal sharing. However, if rationalization is effective it will result in unequal sharing. Thus it is extremely difficult to see how the universities could co-operate without a strong guiding hand.

Unless there is a strong authority monitoring rationalization, it is also difficult to see how some institutions could remain solvent while trying to maintain their activities under reduced funding.

Given the above, it is my strong opinion that a rationalization authority of some form will be needed to supervise the implementation of any thoroughgoing rationalization plan. It is recommended that it should:

- be a separate, independent body (that is, separate and independent of the universities and the relevant ministries);
- report to government at the most senior level;
- have power ('teeth') to carry out its work by being the channel for the government's university funding for both operations and capital;
- have a small board or executive (say, five-person). The board should have equal representation from the universities and the government or the general public. It should have a full-time, neutral chairman (assuming that there is such a thing). The members should be distinguished leaders in their respective fields. The board also should have the power to second or recruit authoritative people to explore and make recommendations on special rationalization questions;
- particularly importantly, it should disband at the end of the rationalization period.

Rationalization time limit

Rationalization should be viewed as something essential but transient. The objective should be to get university education in the province working well on a sound, carefully integrated, well-organized basis relative to the likely availability of resources today and in the foreseeable future. But the universities should not be expected to commit themselves to an arrangement of indefinite duration. Once the rationalized system is well-established and working smoothly, the formal rationalization organization can be phased out. A time limit of five years would seem to be a reasonable period for ensuring full implementation.

Opting-out and opting-in

Each of the universities is an independent legal entity with responsibilities to a specific constituency. Each must have the opportunity to accept or reject participation in the rationalization arrangements.

The responsibilities, advantages, and disadvantages (or penalties) of opting-in or opting-out must be clear in principle if not in full detail at the time of choosing in order to permit each university to make an informed decision.

Academic freedom

Rationalization must not be concerned with course content. Where it is concerned with teaching fields, it must only be concerned with the generality of where the field will best be taught: for example, in deciding which universities will specialize in sociology, romance languages, computer science, engineering, physics, etc. It must not be concerned with decisions on what is taught in these courses.

Sharing

Assuming that whatever rationalization process is adopted is in fact rational and is in the general interest of university education in Ontario, then all the participants must bear a fair share of the burden of the process.

As far as possible, the process must ensure that the wealthy institutions do not simply get wealthier and the poorer get poorer still. In one sense this can easily happen, since the more distinguished institutions are more often than not distinguished by being longer established, better staffed, and better equipped. They are very likely to be seen as the best foundations on which to build any new rationalized system. They are, as a result, least likely to be damaged significantly.

Those that 'benefit' from rationalization in the sense of being identified as assets to be strengthened or retained must accept some responsibility for assisting in the adjustment or compensation of those institutions that are damaged. The sorts of assistance that might well prove reasonable might include:

- Recognition that redundant assets (such as real estate) across the system might well be 'pooled' as a resource to assist in smoothing the adjustment and compensation process. This would not necessarily imply handing over such assets to some central authority, but it could imply an obligation not to hoard wealth so that efficient utilization of such assets would offset in some part the need for outside funding.

- Recognition that it might be in the interest of the overall system to see some exchange of teaching staff to ensure that the best teaching resources across the whole system are well matched to whatever structure the rationalized system evolves into.

That academics are assets to be traded is probably an extremely contentious perspective. However, in any system where people are the primary asset, optimal utilization of personnel is precisely what rational management tries to do. It would clearly be wildly illogical for any well-organized system to wind up after rationalization with second-class assets if first-class assets had been disposed of simply because of where they were located.

- Accepting the curtailment of activities for the sake of balance in a well co-ordinated system, even if the curtailed activity is a thoroughly worthwhile one. To be worth the upheaval, all participants will likely have to accept and mesh with the long-term objectives of the overall system.

Appeal

Finally, there should be some kind of formal appeal procedure to a designated, independent appeal body. Appeal, however, should only be available to those opting-in.

There should be severe time restraints which ensure both prompt adjudication of disputes and the prevention of legalistic 'stonewalling'.

Appeal should be restricted to the details of implementation; the fundamental principles of rationalization should not be subject to appeal.

IMPLEMENTATION PROVISIONS

The implementation provisions outlined here assume that the fundamental points or ground rules raised above are accepted. The implementation provisions also assume that there will have to be some form of special adjustment fund provided by the government which will cover the one-time, nonrecurring costs of rationalization. It is not possible within the scope of this paper to suggest what such costs will be, but they will clearly be very substantial.

Rationalization time limits

In organizing the implementation plan it will be important to establish a number of key time constraints as these will directly affect the acceptance of the rationalization plan.

As recommended earlier, the rationalization period should be five full academic years. That should be sufficient time for completing the introduction and completion of a full four-year program cycle; as well, it should be sufficient time to work out any fundamental problems in the rationalization plan. It is also not so long that the light on the horizon is not clearly apparent.

The beginning and end of the period should coincide with the governmental funding-year period commencing July 1st and running through to June 30th. Any phasing-in or phasing-out requirements will be by the academic year; that is, time limits to complete rationalization action will be in twelve-month segments for the sake of simplicity and practicality.

Timing of change

While there are always retention problems (particularly of the most able people), experience generally shows that where it is possible to phase out activities over very clearly delineated periods, the trauma of upheaval is significantly reduced.

People need time to adjust, to develop alternatives. Where activities are to be dropped, reduced, or moved, it will be important to phase the action over appropriate periods. This will delay the benefits of the action to the overall system, but will materially improve its acceptance.

Again, the use of specific fiscal or academic years for phasing periods seems to make good practical sense.

Opting-in and opting-out

As pointed out earlier, Ontario universities are legally independent entities; they will have the right to reject participation in a rationalization plan that does not suit them. The assumption here is still, however, that the government of Ontario will tie the future funding of universities to the provisions of a rationalization plan. Opting-in should mean acceptance of the basic provisions of the rationalization plan and acceptance of the rationalization authority.

If the rationalization plan is to be effective, it clearly has to be more attractive to the leading institutions to opt in rather than opt out despite the loss of some of their freedom. They will have to be able to see how they would be better off under such a plan than under the present prospect of slow starvation.

Opting-out will have to carry severe financial penalties. It is obviously not possible to postulate sensibly what the penalties will be until a rationalization plan is developed, but the opt-outs can only expect to end up with what limited funds are left after the plan's perceived priority requirements are satisfied. At best, the opt-outs might expect to get something like 60 to 70 per cent of the annual level of their current grants.

However, even if the penalties were severe, some universities might well opt out on the basis that they felt they had a special mission and a special appeal that would enable them to raise funds on their own. This opting-out could well be the genesis of a 'private' university system in Ontario.

Early retirement

Salaries and benefits represent roughly 80 per cent of the cost of operations of Ontario universities; obviously, any rationalization plan aimed at better use of funds will have a dramatic impact on these costs.

Where rationalization results in streamlining staff size on the basis of merit, early retirement is one of several severance provisions available. It is useful in reducing redundant staff levels amongst people of equal merit. However, it is not a reasonable method of further weeding out, since it is entirely age-dependent.

It is likely that there will be a wide variety of pension schemes involved that will necessitate careful development of ground rules. Whatever the details of the schemes, early-retirement provisions are just as expensive as straightforward severance allowances.

There has been a substantial amount of work done in examining the effect on costs of 'progress through the ranks' (PTR). Some of this analysis has been aimed at determining the cost of carrying the disproportionate number of university staff at mid-career (a result of the high-growth period of the early 1970s). In my opinion, while voluntary early retirement from that group would obviously be helpful, it would not be fair or even particularly sensible to take action specifically against people in this 'bulge'.

Severance

Where there are collective agreements in force, there are likely specific severance provisions. Clearly, such provisions must be honoured should people become redundant because of rationalization action. The necessity of sensible timing of any phase-out action has been referred to earlier. The extent of notice of such phase-outs should also be a determining factor in the amount of severance paid.

In my view, severance of university staff who are not under specific collective agreements should be determined on a common basis. There should not be different severance provisions from university to university.

Severance provisions should follow generally accepted principles giving appropriate consideration to age; years of service; the likely time necessary to find equivalent re-employment; special conditions (handicaps, etc.); and the like.

Removal

Where rationalization results in offering staff employment in a different location, the staff should be given the alternative of severance.

Where a staff member agrees to move, two conditions should apply, namely: reasonable moving expenses; and where moving results in having to accept lower income, 'make-up' income for an adjustment period of whatever the severance period would have been had the person been let go instead of moved.

Compensation of students

The question of compensation of students as a result of rationalization is linked directly to loss of 'accessibility'.

Accessibility in the sense of economic availability of university education will clearly be affected if rationalization results in the closing down of faculties and courses in some universities serving specific areas. This will raise the question of whether students who are forced to relocate to other universities should be compensated.

At this point it is important to point out that many fields are not now generally accessible; many courses and types of professional training are offered only in a few universities – for example, medicine, fine and applied arts, journalism, architecture, library science, and law, to mention just a few at the undergraduate level; graduate studies are even less universally accessible.

It is recommended that compensation should be made for any inaccessibility resulting from rationalization, but on the following conditions:

- that compensation covering some element of the cost of travel and living away from home should be made, but only to students who have to relocate some significant distance (that is, to another region), who were living at home, and whose academic record is satisfactory;
- such compensation should be made only to the end of the student's current program;
- the compensation should be in the form of an annual grant of a fixed amount. Such grants should be 'regionalized' rather than specific to each student.

Whether travel grants should be extended beyond the previously recommended 'rationalization period' will clearly depend upon the government's long-term commitment to accessibility.

It is my view that such grants make very good sense as a long-term commitment, if they provide a fundamental means of compensation for the development and maintenance of a truly rational, thoroughly viable university system in Ontario.

REFERENCE

Committee on the Future Role of Universities in Ontario (Fisher Committee) (1981) *Report* (Toronto: Ministry of Colleges and Universities)

Comments

James Gillies

Always mindful of Lord Keynes' epigram that 'in the long run we are all dead', I would like for a moment or two to focus on the long-run accomplishments of the government of Ontario and the universities in the field of higher education in Ontario since the end of World War II. They are impressive in two important ways: first, in terms of providing access to higher education for a large portion of the population; and second, in terms of improving the quality of education.

Prior to World War II a very small proportion of those eligible to go to university in Ontario actually did so. The reason for this was not primarily because of financial considerations but because of the cultural and social patterns which were dominant in the province at that time. To go to university was not the thing to do. The Canadian attitude with respect to universities was basically British – universities were reserved for the elite and this view was widely accepted in the province. We never had in Ontario the concept of education that prevailed in the United States – that in a democracy it was essential for the largest number of people possible to have access to higher education because education was the key to upward social movement in society. We never had anything in Ontario equivalent to the Morrill Land Act which required that every state joining the union after 1862 set aside land for the establishment of a college with essentially free tuition. Out of that Act grew the great land-grant colleges such as those in Michigan, Minnesota, California, and other states.

All that has been changed. The culture and psychology about higher education in Ontario is now that it is important for as many of

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our bright students as possible to go to university and I would argue that we are a much more civilized, prosperous, and enlightened province because of it. It has been a great accomplishment. Further, in spite of the fact that the approach to education in Ontario up until World War II was elitist, there is no question that the quality of higher education in Ontario has improved immensely over the past four decades. Everyone is aware of John Kenneth Galbraith's caustic comment that the Ontario Agricultural College, which he attended in the 1930s, was not only the least expensive university on the continent but also in educational terms the poorest.

The reality is that since the end of World War II the quality of education in Ontario has soared. The innovative developments in medical education at McMaster, the incredibly exciting mathematics and computer programs at Waterloo, the upgrading of legal education from a system based primarily on the proprietorship of law schools by the profession to scholarly based programs – these are all significant indicators of this change. In 1946, there was not even one modern business school in Ontario, in spite of the fact that Harvard's was founded in 1908. Now there are several.

So what are our problems? Why is there concern about education at universities in Ontario at the present time?

Apparently, there are four reasons. First, having created a fine system there is a question of whether or not the taxpayers can continue to support it financially. Second, there is concern that resources may be wasted because of duplications of course offerings and the development of excess capacity in certain subject-matter areas. Third, there is a belief that we have insufficient areas of excellence and that without additional financial support, which is difficult to foresee coming, the required excellence will not be obtained. And fourth, there is concern that other sources of funding, that is other than government, are not available to finance the improvement of programs.

Apparently, according to some, the answer to these problems is to be found in something called rationalization – more effective use of scarce resources within the system – which will presumably free up monies to be invested in various programs more effectively.

But is reorganization, or rationalization, or some such approach the answer? Clearly, resources must be used effectively, but is such effective use and ensuing deployment of any freed-up monies actually going to solve the problems? Is some new type of administrative structure what the universities of the province need, and what the taxpayers of the province want?

It is probably correct, given the priorities of the Ontario government at the present time, that there will not be a substantial amount of additional funds available for higher education. So there is no question that resources must be used effectively. But would rationalization lead to much saving? First, it is very expensive.

I spent many years at the University of California when the higher-education system of that state was being put in place. It was a very innovative and important system that involved integration among junior colleges, state colleges, and the university. It was designed to provide two things: (a) a place in the system for every graduate of a high school in the state of California and (b) a chance for upward mobility within the system. It was imaginative and appropriate for the state but it was not inexpensive.

Moreover, California was fortunate in having a number of private institutions that could act as benchmarks for measuring the cost of the state system. For instance, perhaps the most important factor bringing efficiency – when there is efficiency – into the University of California system has been the existence of Stanford, which of course is privately funded.

In addition, one should never believe that the establishment of the system eliminated or reduced campus rivalry or the need for professors and administrators to use a great deal of their time in developing programs. Competition was immense and the resources spent on program development were as great as anything now spent in Ontario.

Nor does rationalization by itself build excellence. Indeed, there is some evidence that it sometimes leads to the lowest common denominator among competing programs. Excellence is fostered by leadership and competition. I have no doubt that the University of Western Ontario School of Business is a better business school because York University's business school was established. I have no doubt that mathematics in all of Ontario is better because of the innovative mathematics programs at Waterloo.

It is also not correct that there is little outside financing available to help programs achieve a high level of excellence when programs are supported by the state. The reality is that money flows to excellent activities. The University of California at Berkeley, I believe, has the second largest endowment of any university in the world and it is publicly supported. Money flows to Berkeley because of the exciting and imaginative programs going on there.

In time, Gresham's Law works in reverse – good educational programs drive out bad. Students are not obtuse about where the good programs are located and that is where they go. You don't need rationalization to bring excellence. In fact it may work against it.

Rationalization implies that there can be good manpower planning. There is little evidence to support this proposition. Indeed, our experience with such planning in the past decade or two has not been very good. A few years ago, it was predicted that we had far too many engineers. Now we are told that we have too many lawyers. Changes in society happen so fast that we do not know what we will need and what we will not need in the future.

More importantly, who can choose better what career is best for them to follow than individuals themselves? Being able to make such a choice is what living in a free society is all about.

If rationalization is not the solution to our perceived difficulties, what is? Clearly, it must be imaginative and competitive leadership within the university community itself: imaginative about funding from private sources, imaginative about development of programs, and strongly competitive with other communities. Competition and leadership on the campus is what is called for – not the heavy hand of bureaucratic rationalization which will bring inefficiency in the name of efficiency and stultification in the name of opportunity. Moreover, it could threaten the independence of universities; something that no free society should contemplate without deep concern.

The province has done well by education, as have the universities, in the past decades. What we need now is a rekindling of the spirit of adventure and entrepreneurship on the campus – a rekindling of faith, both on and off the campus, in our institutions of higher learning and a drive to create through our own initiative the most exciting institutions of higher learning in the world. Rationalization will not bring this happy state of affairs; more money from the province will not achieve it. The only thing that will bring it about is hard work and innovation on the part of the people within the universities. There is no substitution for these requirements and we should not let the false gods of rationalization lead us to thinking that there may be.

Comments

B.B. Kymlicka

It is unfortunate that the current debate about higher education in Ontario often focuses on the question of 'rationalizing the university system' – to use the title of Mr. Wilson's provocative paper – without first examining the set of institutions we have here in Ontario and the government's responsibility for them, and then debating the need for a 'restructuring' of the 'system' of universities (and perhaps of all postsecondary education) of Ontario and, especially, of the way government relates to it. Neglecting the issues relating to the structure of the present 'system' can lead – as I think it has led Mr. Wilson – to recommendations that are both unrealistic and undesirable.

To appreciate the current problems, one needs to understand that what we have in Ontario is not a system of higher education but a collection of independent institutions. Universities are chartered by separate acts that give each of them full powers to grant degrees and offer programs of their own choice. They were not set up as part of a preconceived system – as were the colleges of applied arts and technology – but simply grew in an *ad hoc* fashion. Only when government financing became an overwhelming source of institutional funding and when that funding in turn became a significant part of the government budget did the long search for structural and financial co-ordination begin. At first this search was conditioned by an immediate and pressing idea: how to accommodate the historically unprecedented growth of university enrolment. The government of Ontario responded to this challenge by allowing the creation of a number of new universities and by selecting a funding instrument that appeared to solve the problem: formula financing. This instrument

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allocated funds to institutions in an equitable way and also preserved the independence of the institutions. Because the formula was open-ended and unconditional, it accomplished the social purpose of government policy: the accommodation of as many students as were deemed qualified by the institutions.

Needless to say, both the government's purposes and the instruments used to achieve them have changed. Open-ended formula financing, successful beyond expectation in encouraging expansion, proved inadequate for solving the new problems that had emerged: duplication of efforts (especially at the graduate and professional level); declining enrolments (especially a precipitous decline); diminished resources; and, most recently, shifts in demands for programs that arise at a time of financial stringency.

At first it was hoped that a loose collection of individual institutions, co-operating on a voluntary basis and in combination with a government-appointed advisory body, would solve most of these problems. But as the present debate about 'rationalization' shows, there is still a dissatisfaction with the effectiveness of the 'system'. However, some argue that all the problems would go away if only the government gave the universities more money. And, in fact, Ontario universities, once most generously funded, now do suffer from being treated with a relatively high degree of stinginess. The continuation of this current treatment will, of course, make the troubles much worse in the future.

Far more basic than the question of rationalization, then, are the following concerns: what is the responsibility of government in higher education apart from providing funds? Is there a need to co-ordinate the individual institutions in a more direct and planned way? If so, what responsibility does the government have for such co-ordination? How can this responsibility be achieved within the present structure and still leave institutional autonomy intact? Arguments about 'rationalization' hide profound disagreement about who is responsible for what and how we should structure the interface between the government and the universities. To say, for example, that the government should 'rationalize' the 'university system' of Ontario assumes that the government can achieve this merely by shuffling the universities' component parts. Mr. Wilson thinks that this should be done and that once the new system is in place the government should leave the universities alone – presumably in the same way they are left alone now.

This proposal is neither desirable nor realistic. Apart from the inherent difficulties of the actual reshuffle[1] – such as in the designing of the new system – the proposal ignores a fundamental question of institutional arrangements and jurisdiction.

This brings up the question of the role of the Ontario Council on University Affairs (OCUA). When it became obvious that problems other than the universities' funding needed government attention and possible intervention, the government established OCUA as an advisory group to guide its policies. Because it lacks executive power, however, OCUA's effectiveness is limited to its power of friendly persuasion. It must convince the government to follow its advice and persuade the universities to engage in voluntary co-operation. Although voluntary co-operation has achieved some useful things – almost invariably under duress – it cannot bear the brunt of co-ordination in areas that the government itself is unwilling to enter. OCUA is further undermined by the government's acting on its advice only when it recommends cuts in funding while ignoring its calls for increased support. This use (or abuse) of OCUA has significantly confused the question of government responsibility in higher education. Not surprisingly, therefore, as the crises deepened, the government has appointed committees to offer it more advice on what to do about the universities: namely, the Wright Commission, the Fisher Committee, and now the Bovey Commission. It is worth noting that the terms of reference of the latter two committees are essentially the same as those of OCUA.

I do not believe that we will come to grips with the problems facing the universities of Ontario unless both the government and the universities face up to the need to restructure the institutional and jurisdictional arrangements between themselves. This restructuring must acknowledge not only the inevitability but the desirability of institutionalizing 'the system' of Ontario universities; it must acknowledge the rightful and inalienable powers of the government in higher education, and it must enshrine the resulting system in an explicit piece of legislation.

More particularly, I think it necessary to give OCUA – or a similar body – specified executive powers. These powers should be derived from both the government and the institutions, with those from the former delegated in an explicit mandate contained in an act. Needless to say, such powers should be limited to those necessary for the co-ordination of the system; they should not include those that only the government can administer (e.g., total allocation of resources).

There is also a need, perhaps, for the legislative articulation of such executive powers with a view to preserving the institutional independence of the universities. At present we are experiencing a slow but sure erosion of that independence by indirect government influence that is powerful even though uncoordinated and irresponsible. The result is not satisfactory to anybody; the whole system suffers.

If a new system were to have a chance of success, there are a number of simple solutions that would have to be resisted. One would be to ask a co-ordinating agency to take care of it. Any basic restructuring should be done only by the government itself. It would be a dangerous illusion to think that a co-ordinating agency could create a new system merely by taking advantage of funding policies and limited executive powers. As Mr. Wilson pointed out, restructuring of the system demands more than a mere reallocation of resources. Another temptation would be to pay too much attention to exaggerated calls for institutional 'autonomy'. For example, it may be necessary to separate out some items of university expenditure, such as library acquisitions and laboratory equipment, and fund them directly. Such areas could be controlled by the central agency rather than by the government or the institutions.[2]

To sum up, any attempt to 'rationalize' Ontario universities must start with making a clearer delineation of the responsibilities between the government and the universities and appropriate institutional arrangements to reflect these responsibilities. I think it is possible to separate the government's ultimate responsibility for the *social* purposes of higher education from the responsibility for co-ordination of the existing institutions as a system and for protection of the essential independence of the individual institution. I'd like to think that it is only by deciding what role the government should play in higher education that we will meet the criticisms that underlie Mr. Wilson's paper.

NOTES

1 Mr. Wilson, by the way, recognizes at least one of the difficulties: how to deal with the people involved. In his paper he suggests that 'before determining the final details of the specific changes' to come with rationalization, an agreement in principle should be reached with 'those directly affected' on how they 'will be treated'. Mr. Wilson has also indicated that academics are not assets to be traded

like baseball players. If this advice were followed, there would be a need not only for a province-wide body to negotiate such an agreement on behalf of the academics – and I take it on behalf of the staff as well – but also a governmental body. Would it be the Ministry of Colleges and Universities, OCUA, or what? As this aspect of 'rationalization' alone shows, one cannot divorce structural issues from proposed policies.

2 Another area of possible jurisdiction for the central agency may be allocation of capital funds – a topic well covered at this conference by Mr. Dowd's paper.

Comments

H. Ian Macdonald

Surely it is time that we examined the origin and interpretation of what has become a needlessly emotive term: 'rationalization'. Concern over that term is certainly not borne out by the earlier references to it both by the Minister and Dr. Fisher's Committee on the Future Role of Universities. In her introductory statement to the Bovey Commission, the Minister refers to the alternatives for 'restructuring' and 'reshaping' of the university system as discussed in the Fisher Committee's *Report* of 1981. Although the Fisher Committee scrutinized such alternatives, it made no recommendations for 'rationalization'. Rather, the Fisher Report mentions the term 'rationalization' in quotations (p. 28) and suggests that such a measure will produce only limited savings. Then, on p. 39 of the report we learn of the origin of the recommendations for 'rationalization': the Ontario Council on University Affair's (OCUA's) 1980 paper entitled 'System rationalization: a responsibility and an opportunity'. OCUA's paper stimulated debate by suggesting system-wide consolidation and rationalization by the universities themselves through the Council of Ontario Universities (COU). Therefore, despite assumptions in the minds of so many, and possibly in the Fisher Report itself, that 'rationalizing' and 'restructuring' are one and the same, I would suggest that 'rationalizing' is an alternative rather than a synonym for 'restructuring'.

'Rationalization' in its true sense means 'the act of making intelligible' or 'explaining on a rational basis'. If we cannot make ourselves intelligible in our very debate on the universities, how can we

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presume to arrive at or act upon an outcome? Second, to acquiesce in other interpretation of the meaning of 'rationalization' is to surrender a great deal in the debate from the perspective of the universities. It is to agree that certain objectives are held in common and that there is some deficiency in the system, if indeed there is a system at all. No one has demonstrated to me why the system needs rationalizing, neither has it been proven that the system has failed to respond effectively to public needs, nor that the system is unsuited to the present requirements of the Ontario economy and society. In fact, 'rationalization' in its incorrect sense presents a tautology in itself: it is akin to suggesting that because one's grocery budget no longer buys enough food, one must be overeating. The so-called 'downsizing' of the universities is thus a suggestion that simply does not follow from perceived circumstances.

I would, therefore, like to offer the following true 'rationalization' of the present system; that is, an explanation or vindication that does not suggest improvements could not be made, but rather that takes issue with the *a priori* assumption that there is some defect in the system. I would argue that the Ontario-university system is remarkably well-suited to our times in its offering of a wide diversity of sizes, locations, and course content in a highly differentiated system. Clearly, it has been capable of responding to a heavy market demand. In my own university, the enrolment has increased by some 40 per cent in the last six years. And yet, over and over again, we hear the suggestion that the Ontario-university system was over-expanded in the 1960s. My idea of over-expansion hardly includes turning away qualified students because of an insufficient number of places for them. Nor does the insufficiency of places indicate 'duplication' of facilities. Who would argue that because Eaton's and Simpsons sell similar merchandise, we have a duplication of facilities – as long as both are earning a profit and the public is clamouring for their merchandise?

Moreover, as far as the so-called 'downsizing' objective is required, I believe that demand for places in universities will continue to be high and may well increase, certainly in some particular regions of the province. The tendency towards more extended education, re-education, and part-time education suggests to me that the demands upon the university will be even greater over the next decade. Once again, the effectiveness of the system in responding to that demand has been well demonstrated by the considerable change that has taken place in most of our universities with respect to part-time teaching, the location of teaching, and the special treatment of those returning to university or coming to university for the first time as nontraditional students.

As to the issue of whether society can afford it, I believe the question must be turned around to ask whether society can afford not to provide for a more broadly educated population. 'The relationship between the worlds of work and education is becoming closer, as economic activity becomes increasingly based on knowledge rather than on human mechanical muscle.' So said the British industrialist, Sir Adrian Cadbury, at the Commonwealth Universities Congress in Birmingham last August while warning governments against their traditional response to the financial pressures arising from slow growth – cutting their investment in higher education.

I would prefer that we concentrate our attention on specific goals, rather than general prescriptions, such as 'reshaping' the system, and that we put our efforts into tailoring the requirements for a more effective linkage between universities and the public.

Recently, as Chairman of the Board of IDEA Corporation, I presented a paper to the Bovey Commission that set forward 'A five-point plan for commercializing university research in Ontario'. Unlike universities in the United States, and unlike universities in other jurisdictions, we have not made notable progress in forging university-industry links that work to marry basic research with commerical application. There has been a tendency to think that such a procedure would compromise purity of academic research. However, in my observation, such efforts in leading American universities have not reduced the number of Nobel prize winners, and I would urge that we give special attention to a number of practical reforms in our university system of which provision for commercialization of university research is a vital consideration.

The five points are the following:

1 Commercialization of Ontario's university research must be accompanied by an improvement in the overall environment for high-risk investing.
2 Ontario's university research must achieve international standards of excellence to attract investors.

3 Ontario's universities must be better equipped to transfer technology.
4 The reward structure in university research must incorporate industrial interests.
5 The universities' research system must be responsive and flexible to technological change.

In these five points, we must consider the great potential contribution from university research. For instance, forecasts from IDEA Corporation calculate that Ontario universities under the best circumstances could generate each year:

- 500 to 600 new products and processes for licensing to existing high-tech firms;
- 50 new start-up firms.

This would require maximum efficiency and quality in research and the best relations between researchers and investors.

And so I will end by suggesting that in the operation of our universities, we should be looking at specific and workable measures such as the commercialization of university research and not at the vague and unworkable notion of 'restructuring the system'.

Comments

Marilyn L. Pilkington

In this debate as to whether it is desirable to streamline, or rationalize, Ontario's university system, it is important to recognize that significant policies of rationalization are already in place. I will argue that these policies are counterproductive because they operate in the absence of defined objectives for the rationalization of the university system. Effective rationalization, indeed radical restructuring, of Ontario's university system is desirable and unavoidable if we seek to maintain and enhance our university capability in an ongoing period of financial constraint.

We already have policies of rationalization

In Ontario no new professional program (OCUA, 1982/3, p. 98), no new graduate program (OCUA, 1977/8, p. 55; 1979/80, p. 81; 1980/1, p. 45; 1981/2, p. 111), and no new special or quasi-professional undergraduate program (OCUA, 1982/3, p. 98) is funded by government unless it first has been approved by the Minister of Colleges and Universities with the advice of the Ontario Council on University Affairs (OCUA). In these important areas, then, there is already highly centralized control over the future development of the university system.

With respect to professional programs, their high cost and purposive function – to produce skilled people to meet Ontario's and Canada's needs – justifies or at least explains political control over funding approval.

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It is more difficult to make the case for centralized government control over the funding of new graduate programs, which generally are not as closely linked to manpower needs. Government control in this area was an indirect attempt at rationalization of the system. It was hoped that, by funding new graduate programs only in areas of a university's established strengths, universities within the system would become further differentiated and a rationalized university system would eventually emerge. However, in the absence of consensus as to the overall needs the system must meet, let alone the role that each institution should have within that system, it is difficult to assess whether a particular institution should be funded to offer a particular new program. In addition, it was hoped that the requirement of government approval would dampen the ambitions of universities in Ontario, making it clear that they could not all aspire to become multiversities. This dampening was required at least in part to counteract the incentive for growth in graduate enrolment that is inherent in the government's funding formula. Unfortunately, government approval as a mechanism of control has a high cost: it impedes university initiative at the cutting edge of new developments where, it can be argued, universities ought to have the most freedom to innovate.

Government control over the funding of new quasi-professional or special undergraduate programs also sends a confused message to universities. As universities have increasingly responded to the need for well-trained personnel to serve the province's needs, they have been penalized by losing a further degree of autonomy.

Controls over new programs can be a significant tool for rationalization if they prevent unnecessary proliferation of programs within the system. However, if the controls remain unchecked, they can also severely undermine the universities' capacity to innovate in response to new opportunities. Moreover, such controls are incapable of bearing the whole burden of rationalization.

Other than these controls on new programs, little attempt has been made in Ontario to rationalize university offerings. The Council of Ontario Universities (COU) has quite properly declined to tell its member institutions what their respective roles should be, even for the purpose of assessing new programs (see OCUA, 1981/2, p. 113-15). OCUA has cautiously begun, with the establishment of its Academic Advisory Committee (ibid.), to enhance its capacity to deal with new programs, but with the appointment first of the Committee on the Future Role of Universities in Ontario (Fisher Committee) and then the Commission on the Future Development of the Universities of Ontario (Bovey Commission), it has effectively been pre-empted from taking further initiatives. Attempts by OCUA and COU to develop a 'sector approach' in graduate planning – designed to provide universities with flexibility within defined areas of strength – proved futile (OCUA, 1980/1, p. 62; 1981/2, p. 115). Further, their attempts to change the funding formula to provide flexibility for universities to rationalize themselves came to nought (OCUA 1982/3, p. 155, p. 174). In addition, the pleas of the Fisher Committee for the government either to provide adequate funding for the existing university system or to restructure the system to preserve excellence and accessibility given the current level of funds have so far gone unanswered (Fisher Committee 1981, pp.42-4).

Our present instruments of rationalization are inadequate and we have reached a stalemate: our underfunded university system has no prospect of increased funding and no capacity to restructure itself to maintain its objectives within the funding available. One can only hope that the Bovey Commission will recommend a means of breaking the stalemate. In my view, well-planned rationalization in accordance with specified long-term objectives is the solution.

Further rationalization is desirable and inevitable

We already have a degree of rationalization in our university system in that we have an *ad hoc* mix of types and sizes of universities and a significant amount of differentiation among them. No one institution can hope to provide the full range of programs in all specialities. What we need to ensure is that Ontario's needs are met through a system of institutions that offers a full range of programs through its diverse components. Thus, those who argue against rationalization should be called upon to justify why Ontario's needs are best served by the existing degree of rationalization and no more.

Even in the absence of financial constraints, rationalization would be desirable to enhance quality and ensure an appropriate array of programs across the province. Now that underfunding of the university system in Ontario appears to be chronic, rationalization is essential. As the Fisher Committee (1981, pp. 42-4) argued, in the face of inadequate funding there is only one option – to preserve the quality of Ontario's university system by contracting and rationalizing some aspects of it. The other choice, which is not in my mind a viable option, is to run down the quality of the whole system.

The painful and dislocating process of restructuring will be worth it only if it enables us to maintain excellence and accessibility within expected funding levels. No doubt the initial process of rationalization will be costly, but in the long run a rationalized university system will be more cost effective. A university that offers advanced programs across a wide variety of fields is undoubtedly more expensive to operate than a university with restricted fields and levels of study. Accordingly, restricting some institutions as to fields or as to both fields and levels of study, will result in cost savings. Further, through ensuring that each program offered has a critical mass of students sufficient at least to support a minimum range of course offerings in the field, education dollars will be used more effectively.

It was government that created the expanded university system in Ontario to meet perceived public needs, and it is the government that can and should change that system to ensure that public funds are used to maximum effect. As the costs and the importance of higher education increase and as resources become more scarce, the world-wide trend is for decision-making to move up the hierarchical scale and gravitate to the political arena (Perkins 1972, p.299). What we in Ontario must decide is whether it is preferable to gravitate towards a centralized university system or to rationalize the system now to preserve important elements of autonomy and initiative.

What kind of rationalization?

Two possible approaches are available for restructuring Ontario's university system. The more radical approach is the bifurcation model developed in California (see Wittrock 1982, p. 307) and Sweden (ibid., p. 316) and recommended for Ontario by the Fisher Committee (1981, pp. 42-4). This approach would preserve some universities as centres of excellence that would operate at the most advanced levels and have the freedom to develop their own programs of instruction and research. This freedom would be justified by the fact that scholars, not governments, are best equipped to decide which challenges should be pursued on the frontiers of knowledge and how best to pursue them. Their budgets should provide sufficient discretionary funding to enable them to develop and respond to new opportunities

(Trow, p. 122). The remaining institutions would perform the mission that Professor Astin described earlier in this volume as 'developing the talent pool'. These institutions would also strive for excellence within their mandate, but would be more closely monitored by government.

A more gentle mode of rationalization entails making selective cuts in every university but not in every program, leaving each institution with some centres of strength. The institutions would then be differentiated more by subject matter than by the nature of their role or mission in the system. This approach would not yield the economies of a bifurcation model. To maximize our capabilities in advanced research, it would be preferable to concentrate the required resources in fewer institutions. The radical restructuring required to implement a bifurcation model within Ontario's existing university system could not be accomplished by a committee of experts. Rather, it would be those who are politically accountable that would have to make the necessary judgements, based on their perception of public priorities. In this process, it would be important to develop and communicate the criteria for rationalization, to hear from those affected, and to seek the advice of experts, so that the best system that Ontario can afford is attained. Once the university system has been restructured, an appointed group with executive authority could then exercise whatever centralized powers are required to maintain it.

CONCLUSION

For some years we have been debating whether or not Ontario's university system should be further rationalized. We have made some attempts at rationalization, but the tools we have used have been too blunt and indirect to reach the mark. The time has now come for both the universities and the government to declare their intent. The universities who have argued that underfunding has seriously eroded their strength must now decide whether it is more important to protect their individual vested interests or to protect and enhance the overall effectiveness of Ontario's university capacity. Given the constraints on resources, government must decide whether it is more important to avoid the political problem of altering our current university system or to restructure it to meet more effectively Ontario's long-term needs. Very few publicly-funded university systems in

North America have as decentralized a system as now operates in Ontario. It is a luxury which we in Ontario can no longer afford.

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Comments

Sarah Shorten

It seems to some of us that we have been talking about rationalization all our lives. In the past eight years in this province, we have set up committee after committee and commission after commission to discuss it; essentially we have been saying the same thing for quite some time, and the words have had no effect. Some years ago I worked with the Ontario Confederation of University Faculty Associations (OCUFA), and at that time we thought that we would achieve an important victory if we persuaded the Ontario Council On University Affairs (OCUA) that there were serious problems confronting the universities as a result of inadequate funding. OCUA then wrote some excellent papers, but they were ignored. Later there was the Fisher Committee. I share the view with many others that the Fisher report was a good report, but nothing has come of it. Not just members of the university community, but people from out there in the real world have told government that there are problems in the universities, and that these problems stem largely from underfunding. The government has ignored their advice too. Things are starting to go wrong – we are turning away qualified students, students are sitting on floors, programs are being cut, library resources are deteriorating – yet we are still being told that we must rationalize. It seems to me that this combination of a proliferation of words and dearth of action is tragic.

To accept rationalization as inevitable is to make this premise self-fulfilling. Further, it seems to me that while there may be grounds for

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despondency and despair some days of the week, to give in would be a recipe for disaster.

I welcome the approach that several of my predecessors on this panel have taken, in asking what rationalization actually means and what precisely it would accomplish. As Ian Macdonald has implied, all too often it is simply a poorly used buzz word thought to have something to do with cutting funds and nothing to do with reason, intelligibility, or effectiveness.

We are now seeing what we always said we would see in the absence of a change in government's attitude, namely a tradeoff between accessibility and quality. However, in this tradeoff, both access and quality are being damaged.

Those who argue that access must be reduced ignore the fact that since 1970 some 90 per cent of the increase in undergraduate full-time enrolment in this country has been accounted for by the increase in female participation. They could therefore be interpreted as making suggestions about female participation that I would be reluctant to impute to them here. Further, if one looks ahead at the changing work patterns that are expected later in this century and that are already being signalled by the demand by older students and by part-time students, some returning to the university and others coming for the first time, one can see that to compromise on this province's traditional policy of broad access at this time is unthinkable in social and economic terms.

I would echo very strongly Dr. Macdonald's remarks about education being an investment in the future. Recent studies in the United Kingdom have shown that money invested in education gives a higher return than investments made in almost any other section of the economy. To view the universities as simply a drain on the public purse is to distort reality.

Goals of rationalization

If saving is not the goal of rationalization, what is? One favourite word in this connection is 'efficiency'. Universities are in some ways analogous to businesses – the accounts must be kept and the physical plant managed. Criteria of efficiency alone should not, however, be simply translated over into the teaching and research enterprise. In that enterprise, surely there should also be criteria of efficacy, quality, imagination, and dynamism. A narrowly bureaucratic approach simply makes nonsense of the facts of scholarly and educational life.

Another possible goal of rationalization might be 'productivity'. We all know that at the moment, as a result of cutbacks in staff and in library resources and of the failure to restore laboratory equipment, the research effort is, if anything, declining. Certainly it is under threat. It is difficult, then, to see how we are going to enhance productivity by so-called rationalization.

What government often appears to be seeking is not merely cost savings. These can be effected quite easily by continued underfunding. Rather, if one looks at the politics of education in other countries in the western world, one sees a tendency towards seeking centralization of authority. I have never heard any clear argument in favour of the view that centralization would be advisable. Advocacy of centralization frequently goes hand in hand with a vague mistrust of universities, a mistrust of perceived elitism, and a diffused anti-intellectualism that should frighten us all.

If what one is pursuing through rationalization is enhanced quality (and that is the only respectable rationale for any of what we have heard discussed this afternoon), then we need to examine what sort of rationalization would make sense.

There has been much said recently to the effect that we need to get rid of some of the tenured senior professors, and that one way of rationalizing would be to do precisely that. It is important to realize that those of us who are now a part of the bulge in the faculty age profile, and are going to be around for a while unless people can think of a good way of removing us, have worked pretty hard through a difficult decade. It is important to remember that after such a decade, it is surprising that the quality of education and research in this province has remained so high, particularly in view of the enormous strains on the system through vastly expanded student enrolment. We have been enriched by our senior colleagues, who have taught us to take part in the very varied aspects of life in the university, not only teaching and research, but program planning, university governance, and so on. Yet some are now suggesting that these senior academics, after a career commitment to the university, should be discarded in the interests of younger scholars (who presumably are to look forward to the same treatment at some point in the future). If governments in this country wish to redesign the age profile of the academic community, then clearly they are going to have to think through a whole plan, and they are going to have to pay for it. They have invested in a system that has placed in the universities a group of people who have a career commitment to our institutions. To advocate the cheap argument that one might get rid of those people in favour of the young (who, if they had any sense, wouldn't take any kind of job like that) is incredibly short-sighted.

John Wilson says, quite sensibly it seems to me, that the kind of plan that he is talking about would take at least five years to accomplish. Well it would indeed, and that would place us in 1990. At that time, professors in the age bulge will be retiring in increasing numbers. Further, I don't think any of us is so confident a crystal ball-gazer as to suppose that we have any very clear idea about what our needs and problems will be in 1990. I share with my fellow panelists, and particularly Dr. Gillies, the view that the incredible bureaucratic effort, the heavy-handedness of a massive restructuring, would be dysfunctional, extremely expensive, and would presuppose that we have a much surer hand on the future than I think any of us has any warrant to believe.

Comments

George Korey

It has to be recognized that universities and businesses/industries, as organizations, operate in two different 'cultures'. They manifest themselves as two different types of institutions, each fulfilling two different obligations.

Universities' obligations are to society directly (which also includes business/industry) in terms of development and expansion of knowledge through research and the dissemination of the same. For this, freedom for individuals (professors, researchers, etc.) in pursuit of these activities is necessary.

The obligations of corporations are to shareholders, employees, and customers in the first instance because of the profit motive in the delivery of products, services, or processes.

As a first premise, a better understanding of each other's organizational 'culture' is needed as a prerequisite of understanding potential collaborative modes benefiting society in general.

Universities also must face up to the fact that financial support through the public purse is limited and always subject to political movements. This is the actual root of any threat to independence and, as a consequence, the perception of attack on the freedom of academic institutions. Universities must face the consequences with well-developed plans if they want to remain in charge of the process that determines their own destiny. This involves strategic planning, already identified as a major activity in any organization. It is generally defined as 'positioning the organization for competitive advantage in the total environment'. Once this is recognized, creative solutions can be formed and accepted.

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Universities must maintain their ability to do great things through their contribution of knowledge for the benefit of mankind. The imagination and creativity at work within universities also has to be applied to the challenges they are facing as institutions and as a system. The competition of intellectual thought sparks excellence. The competitive spirit also brings out the best in the development of organizations. Perhaps the best road to maintaining such excellence for Canadian universities is via the introduction of *independent* universities and the operation of *independent units* of universities.

Subsidized universities are, of course, accountable to society. Their responsibility is to be well governed in order to account for investment made by the taxpayers. But today, the taxpayers are getting restless. They are questioning some of the expenditures of higher education because they don't really understand how complex the system is and how it is working.

Mr. Wilson, as a concerned citizen and taxpayer, unfortunately has made some statements that show that he too is not completely aware of the tremendous complexities of the system. For example, he said that opting-out institutions should only be left with 60 to 70 per cent of the annual level of their current grants. That would not be enough money to pay for salaries alone.

The representatives of universities that I have listened to today have preferred to talk about the underfunding as a problem, while the businessmen prefer to see it as a challenge or opportunity. An exception was Jim Gillies, who saw it both ways, as he is both a businessman and an academician. Dr. Gillies indicated that there is scope for more money to be made available from corporations. In the United States, for instance, corporations' annual budgets for training and upgrading of professional qualifications exceed the budget for the entire American-university system.

If we all agree that there is no more money available, the question is really how best the money we have now can be spent in Canadian universities, especially given the changing role of universities in our ever-more-complex society. Some examples of new areas of involvement for universities include distance education, open-university instruction, co-operative learning, self-study with the assistance of computers, video, and TV, and facilitation of life-long learning. The whole relationship between the world of work and what is taught in class – the practical aspects, the application, the diversity in education – these are the issues that we should be discussing today.

One reason why the universities are missing the billions of dollars spent by corporations on training and development is that academics are not usually prepared to offer credentials for the type of professional training that the corporations require. In the United States there are aout 65 programs that offer professional credentials. In Canada only a few of these exist at this time.

To conclude, there are many varieties of training programs that are now part of Canada's overall educational system. Given this diversity, universities must be prepared to make changes in their attitudes as well as adjustments within the system. I am talking here not only about attitudes of individual academics, but also of the administrators whose decisions influence the way in which universities are run and who determine its policies and sense of direction. As I said earlier, perhaps the time has come in Canada to have a private, independent university system, in part to deal with course innovations and competition. That would leave universities free to remain doing what they already do best, and give the private institutions more leeway to explore new ground.

Discussion

IAN MACDONALD: I would like to challenge the Ontario Economic Council or some appropriate body to do a study on what taxpayers' attitudes really are towards universities. I don't believe that governments or the taxpayers in this country are setting out to starve universities in an act of bloody-mindedness. Some 80 to 85 per cent of the students in York University come from families where neither parent went to university. Over the years I have spoken to dozens and dozens of the parents. Many are people who have scraped and saved and worked hard; they are ecstatic that their sons and daughters went to university. In addition, fellows I grew up with and went to school with and played on teams with, who are blue-collar workers, will call me up to ask if I would come and talk to their children or grandchildren about the importance of going to university. I suspect, then, that it's mainly people who are already enjoying the benefits of our postsecondary-education investment who now do not want as large and as diverse a postsecondary-education system as we already have. Again, this is only a suspicion – let's find out for sure.

JOHN WILSON: I'd like to get rid of some of the straw that is in the straw man. What I am saying as an individual outside the system is very straightforward – it seems to me that there is no more money for universities than what they are already getting. If there is no more money, then let's take what we have, and let's put it where we will get the most bang for the buck, where it will protect what is good in the system. I don't think you can do that, however, unless first of all the government is committed to it, and second, you have a mechanism, such as a rationalization plan, for getting it done. That's all I've been trying to say.

JIM GILLIES: First, I think it's unfortunate that we don't have private universities. There's no question that the University of California system is constantly measuring its costs against Stanford, for example, and that it is very helpful to have the private system there to be measured against. Second, I am not worried about there being a plot to starve universities. In my seven years in Ottawa, I couldn't find five people who could plot successfully where they would go downtown for lunch. Third, I have to agree with Ian Macdonald that we in the universities should ourselves be seeking more financial support for universities. And if we really want to get more money for the universities, we've got to show the politicians that their constituents really do want more money spent on universities. We all know that nothing attracts the attention of an elected person faster than constituents demanding what they really want. Our policy ought to be to convince the people of Canada and Ontario that we have a first-class university system here and that their representatives in the legislature better support it.

JOHN CRISPO (University of Toronto): How can this province possibly continue to carry 16 universities with the amount of funding we have got now or can conceive of having in the foreseeable future? Without naming names, I would say that about half of the existing universities in Ontario should become 2-year, liberal-arts 'feeder' colleges that feature some of our best teachers. Don't tell me there would be no saving in this. And don't think that this would mean closing down all the universities in the boondocks. Most important is the fact that such a reorganization could lead to a much more rational allocation of resources at the university level.

IAN MACDONALD: First, I don't think we have, by any means, 15 (16 including Ryerson) identical institutions. We have a highly differentiated system. Second, there are enough people participating in the present system to warrant its continuation. Third, I don't see 'feeder' colleges being set up by our competitors on the university front in the rest of the world.

DAVID WINCH (McMaster University): Why are we talking about rationalization? I think everybody would agree that we are attempting to design a system that will rationally maximize our objectives subject to our constraints. But do we know precisely what are those constraints and objectives?

I suggest that in a provincially created system funded by government, the objectives are determined by government. We can only infer the objectives of the governments through the policies of government. I am going to offer you, then, one set of inferences. The basis of this set of inferences is that the university system we have now is 100 per cent rational already.

We began the sixties with a woefully inadequate system of universities, a government that saw a public demand for bigger and better universities, and a minister that had political ambition. The best way to make everyone happy seemed to be to spend money frantically and blast a major university system onto the map faster than anybody. That meant putting up buildings, hiring all the talent available in Canada, and then going everywhere else in the world to attract more with a promise of successful careers in a big system. After a few years, the system was in place, it held the biggest budget in the cabinet, and the politicians behind it were well on their way up the ladder.

Then came a period of retrenchment. We satisfied the taxpayers by making sure the system was run as cheaply as possible. We let the buildings run down, the equipment run down, and the morale of the faculty run down. The actual effects of this retrenchment won't be fully apparent to the public for a few more years. What will happen then? Well, at that stage, the universities will be accused of having created the problem, of being unable to rationalize themselves on their own.

If the objectives of government are to have a system that is big and cheap, then what we have got is fully rational for those objectives already. With the above in mind, is John Wilson suggesting that this system would further the objectives of this government better if it were smaller, that is, if more campuses were closed? And how much saving would this actually entail? Does he really think that when the system is already overcrowded that we could all walk out of some of our closed-down classroom buildings in some of our little towns and be able to accommodate the students elsewhere? What are we going to do? Put up new buildings in the big cities to replace the little ones we have walked out of? Again, already the present system is the cheapest in the country – and already it's looking like it too.

JOHN WILSON: Who has said that the education of large numbers should be the objective of this province? I am not convinced that we need, for example, more engineers, or more computer scientists, and so on. Maybe we should be trying to educate a fewer number of people to a better level.

QUESTION: Does the business community really believe that borrowing to invest in high growth so it can export power to the United States is a better investment for Ontario than investing in skilled manpower? Does the business community really believe that investing in a window on the oil industry is a better investment than investment in the research potential and output of the universities? I myself would like to see Mr. Wilson up there with Dr. Macdonald lobbying for increased investment in manpower and knowledge in the province, and I hope we will see him do that in the future if that was not his intent today.

DAVID STAGER: On the one hand, John Wilson seems to be willing to see fewer students in the system. On the other hand, he seems to dismiss any possibility of a fee increase. On this latter point, I would like to ask him why.

JOHN WILSON: I am generally against the idea that somebody will be prevented from entering the system because of an income problem.

The idea of restricting total enrolment doesn't bother me as much as the idea of restricting a well-qualified applicant for financial reasons. To me, that would be entirely wrong for Ontario.

JIM GILLIES: Do you think that the standards of admission to the higher-education system in Ontario are too low?

JOHN WILSON: Yes, in some of the institutions I suspect they are. The system essentially operates on per capita grants; I would guess that, in order to get enough students enrolled to meet their budgets, some institutions take kids at lower and lower levels.

MARILYN PILKINGTON: This is not the first time that universities have been advised to promote themselves to members of the legislature and the public in order to obtain more funding. Although some campaigns have been mounted, their success has been limited. That being the case, unless we can come up with innovative forms of funding that have not yet been considered, it seems to me that, as Mr. Wilson says, we must address the problem we face: either manage with what we've got or change the system so that we can preserve and enhance its strengths within the bounds of our current resources.

It's possible that universities can manage comfortably with what they have. They say that they have been accomplishing more, even with strained resources, and their research output would seem to support that. However, universities individually and the system collectively must still set priorities to ensure that resources will be effectively utilized.

Universities and the information-technology explosion

Thomas A. Brzustowski

The title of this paper, which was also the title of this section of the conference, is sweeping in scope. The topics suggested for discussion have nevertheless been narrowed down to three issues which are very important to universities today: the impact of the information-technology explosion on the mechanics of teaching, its potential for reducing teaching costs per student, and the universities' responsibility for applied research in information technology. This paper deals with these and other issues in terms of one university's experience, providing hard data on cost and performance wherever possible.

It is clear that information technology has many profound implications for teaching in the universities, but its potential for greatly reducing costs of teaching per student is questionable. Many of the potential applications of the new information technologies in teaching constitute labour-intensive enhancements, rather than substitutes for traditional forms of instruction. If implemented wisely, they can improve the quality of education offered at universities, but are not likely to relieve any budget problems.

The university has an essential role in applied research because it is the one institution which can combine research with education to provide society with both new knowledge and people who can use it. Some of this research in information technology can attract very substantial support. Unfortunately, under the present system of funding research in Canada, a major research project in information technology can turn out to be a heavy burden on the university's resources even if it is supported by an extraordinarily large grant from the Natural Sciences and Engineering Research Council (NSERC).

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INTRODUCTION

To focus the discussion, I shall deal mainly with the use of computers on campus. I shall begin with the obvious, and proceed from there to the increasingly speculative. Other topics in this area, such as the use of modern information technologies in distance education, must be left for another occasion.

It is important that we discuss the universities' responsibility for applied research in information technology. It is my view that universities qualified to make a contribution in this area should do so. However, I shall provide an illustration of the high price of success in obtaining a major NSERC grant for such work.

Throughout this paper, I shall speak only about the University of Waterloo, and leave it to those more informed than I to decide how much of what I say applies to other universities as well. My reason for this is to avoid making any unwarranted generalizations about the universities. I often read sweeping statements and hear public pronouncements which appear to be based on information about one or two institutions and the implicit assumption that they are all the same. Many such statements have been quite inaccurate in the case of my institution. I hope that the discussion at this conference will be more informed, reflecting the same need to develop a discerning view of the Ontario universities that has compelled the Bovey Commission to learn about the particular circumstances of each institution before making recommendations about the system as a whole.

I am convinced that the Ontario Economic Council will have achieved something important if this conference does no more than inform the public that the Ontario universities are by no means all the same, and that some of them contribute to the welfare of the province in very distinctive ways.

COMPUTERS AND THEIR IMPACT ON THE MECHANICS OF TEACHING

Using computers to teach computing

Computers are well established as a teaching tool in courses on specialized aspects of computers and their applications. The motivation for their use in these circumstances is both direct and compelling. The faculty could not conceive of teaching most of the curriculum in computer science without providing the students with ready access to modern computer systems, including both mainframes and microcomputer networks. Equally, no one would attempt to teach computer-aided design (CAD) to engineering students without at least a dedicated mainframe and good graphics terminals. There is great scope for pedagogical innovation in these subjects, but the use of the computer as the major teaching tool is inescapable.

The faculty in these areas are, almost by definition, expert in the use of computers. Their students tend to list computers and computing as their main interests. Many of them are already fully computer-literate when entering university, and some are quite fluent in a variety of computer languages and operating systems.

In teaching computing and its applications, commercially-available software can be used quite effectively, given that the nature of the subject matter automatically makes any such software course-specific.

Finally, there is a great deal of experience in using computers to teach computing courses to large numbers of students. This means that reliable cost figures are available for budgeting this activity. For example, Waterloo's typical, direct operating cost for teaching computing courses supported by the university's Department of Computer Services (DCS) is now about $60 per student-term course.[1] This figure includes equipment, maintenance, supplies, and staff costs. However, it does not include the cost of software, system development, space, or of the faculty's and demonstrators' time.

I shall now turn to look at the use of computers in various other areas in education in terms of the same factors touched on in the preceding discussion – namely, motivation, faculty acceptance, faculty expertise, pedagogical foundations, equipment requirements, student preparation, software availability, and operating cost.

Computers in maths, science, and engineering

Consider, for example, statistics as taught in the Faculty of Mathematics and mechanics as taught in the Department of Physics. The experience at Waterloo shows that these subjects are similar in the use made of the computer as a teaching tool. The motivation to use computers was also the same in both cases – to enhance the presentation of course material by illustration and simulation. In the statistics class students are able to 'see' how different statistical distributions fit a given set of data, and can follow the effect of varying the parameters of these distributions 'live', while the professor is lecturing. In the physics courses, the computers are used off-line to illustrate the theories presented in lectures and to solve assigned problems. The strength of the latter system is that it greatly expands the scope of what can be taught. The curriculum is no longer limited to idealized models which can be described by simple formulas. Real effects can be included, and the solutions can be simulated graphically.

These two examples are not new. They have been around for almost a decade, and in the second generation are now implemented on microcomputer networks. In each case, the idea originated with a faculty member who also had the ability to implement it. It took time to develop the best way to use these new teaching tools, and also to produce the needed software which could not be bought. Such software tended to be not only very course-specific, but also very much suited to the teaching style of the individual professors who developed it. In one case, this development was the principal scholarly activity of one faculty member for about a year; in another, a junior faculty appointment was dedicated entirely to the computer laboratory for the first three years of its existence.

In both cases, equipment was provided through the Academic Development Fund, and, in the case of the statistics classes, a substantial amount was also donated by industry. Further, assistance was provided by technical staff from the central computer centre, by students, and by colleagues.

Students being taught had the background preparation necessary to take advantage of these new teaching tools, although some further instruction on the use of the system in the physics lab was still required.

The cost of development of the physics lab, including equipment as well as the dedicated salaries, was about $250,000 over the first four years. The cost of the development in statistics was about $30,000 over one year, exclusive of the faculty time spent on it. The current operating cost of each system is probably close to the $60 per student-term course given earlier.

There is no question here of the computer becoming a substitute for another teaching resource. Rather, the use of the computer is seen as an enhancement of the students' educational experience, albeit at a price.

There are many areas in the curriculum where enhancements of this type are feasible and desirable. The rate at which they can be implemented, however, is limited by five factors:

- funds to acquire the incremental computing capacity required, usually available through microcomputer networks;
- space in which to house the new computerized teaching laboratories;
- funds for the maintenance of the new equipment (a large educational user with significant in-house technical capability and access to educational discounts still assumes an annual maintenance burden of about 10 per cent of the purchase price);
- funds for the maintenance of the software;
- faculty time.

The last factor imposes the most severe limitations. This is yet another symptom of a very high student/faculty ratio (well over 20:1 at Waterloo).

Commercially available software in education

Many subjects and courses are enhanced by the use of commercially available software. Perhaps the most common example of this is spreadsheet software (such as LOTUS 1-2-3) available for microcomputers. Software of this kind is extremely helpful in teaching accounting, engineering, economics, and a number of other subjects. Additional examples of software include the statistical packages that are used widely in the social sciences. In the past they ran exclusively on large timesharing systems (with a problem of long response time during the peak hours of use) but they are now also becoming available as software packages for microcomputers.

In all these cases, the amount of motivation, faculty acceptance and expertise, pedagogical implications, equipment requirements, and operating costs would not be different from those in the preceding subsection. The big difference rests in the fact that the commercial software discussed in this subsection is much more readily available.

At first glance, the situation appears very promising. Faculty members know how to use the software to enhance their teaching. They are too busy to write it themselves, but no matter – the best commercial-software products are sufficiently general and flexible to serve the needs of many different courses and instructors. If funds could only be found for the equipment, space, and maintenance, this would seem to be the way to improve the quality of education for many students. It might even relieve the load on the faculty somewhat. Lectures in some courses could be reduced to two hours per week from the customary three if students had the opportunity to work out sample problems and to explore 'what if?' questions on computers and on their own time. I hope that this promise can indeed be realized. But that can happen only if the problem of high software costs can be resolved, as I shall discuss further in a later section here.

Computers and teaching-support services

Teaching-support services tend to be offered on the mainframe of the university's computer centre. They include a text-processing service (for example, SCRIPT) which is available to all faculty and students who have access to a terminal.

Some teaching-support services are of a very general nature, maintained centrally, and require little faculty expertise for their operation. Their success does not depend on the commitment of individual faculty members to using them, but rather on a collective decision that the service is desirable in the university. Some other teaching-support services are more specialized and involve faculty members in an advisory capacity. These include data banks used for both teaching and research in the social sciences. Often treated as 'free' resources, their cost is supported through central budgets and is thus invisible at the level of the individual faculty member except when they are heavily used in connection with externally supported research.

It may prove more difficult to implement services of this kind in the future because of the strained state of the university's resources. New services which are desired might have to displace entirely any old ones whose utility has declined, or else be implemented on a full-cost-recovery basis. Such decisions will not be easy ones.

CAI and CAL: the next generation?

I have saved the most speculative discussion for the last. This concerns the use of the computer as a teaching tool under circumstances in which the motivation, faculty acceptance, faculty expertise, pedagogical foundations, student preparation, and software availability and cost are all largely uncertain. I include both computer-assisted instruction (CAI) and computer-assisted learning (CAL) in this category.

In this context, I am making a definite distinction between CAI and CAL. Both involve lessons written to provide an element of interaction with the computer. I call these computer-assisted (CA) lessons. But in CAL, these lessons are left to the students to use on their own time and perhaps outside the syllabus of any particular course. In CAI, they are incorporated into the lecture periods, labs, or tutorials of a course under the supervision of a professor.

One often hears the hope expressed outside the universities that the widespread adoption of CAI and CAL tools might produce significant economies in the process of university teaching, reducing the costs per student course and increasing 'teaching efficiency' (which is, presumably, the the ability to provide an effective educational experience to increasingly large numbers of students) to such an extent that university funding and accessibility will become much less pressing social issues than they are today.

Within the universities one hears the more modest hope that CAI and CAL might provide the students with the opportunity to learn routine material individually and on their own time, so that classroom time could be better spent discussing concepts. An infinitely patient, interactive, and dedicated tutor, available to the student at any time on a drop-in basis, is indeed an attractive model of the computer as a willing servant in the task of learning. Unfortunately, it is still only a model.

The biggest single obstacle to implementing CAI and CAL on a large enough scale to have an impact is the lack of software. The writing of such software is an incredibly labour-intensive task: the rule of thumb seems to be one- to two-hundred hours of writing software for every one hour of CA lesson. This time is about two orders of magnitude greater than the time required by a faculty member to prepare a lecture in a course previously given. The reason for it is easy to understand. To provide a useful level of interaction with the student in a CA lesson, it is necessary to anticipate a very large number of responses to the material which the student might generate. In contrast, a well-informed and well-prepared lecturer can deal with student responses to the lecture as quickly as they arise. Thinking on one's feet is more efficient than trying to predict all possible questions and provide all possible answers in advance.

There are grounds for believing that this situation might improve. Special languages such as NATAL are being developed to facilitate speedy 'authoring' of CA lessons. Research in artificial intelligence and expert systems may lead to major improvements in the quality of the interactive elements of the CA lesson. Moreover, numerous large educational experiments in both CAI and CAL are underway to test pedagogical aspects of computer assistance. If all of this work turned out to be successful, it might become possible to write better CA lessons in far less time than now required, and to have some confidence that they would prove effective. In addition, the technology could become far easier and cheaper to implement.

Unfortunately, such improvements would still not guarantee acceptance by faculty and students. Despite the successful applications of computers in teaching which were described earlier in this paper, I detect no widespread demand for CAI or CAL among my colleagues. There are some very enthusiastic advocates of both CAI and CAL at Waterloo, and they have been doing good work, but they constitute a very small fraction of the faculty. Student acceptance cannot be taken for granted either. It seems likely that recent high-school graduates would have little trouble with the mechanics of CAI-CAL, and would quickly move on to the lesson material. But older students, particularly those who graduated a long time ago or who entered university for the first time as mature students, might be intimidated by the computer to such an extent that most of their effort is spent on mastering the mechanics of the medium rather than its educational content.

The majority of the faculty are unenthusiastic about CAI-CAL on pedagogical grounds. They claim they are already using a cost-effective educational medium that provides random access to a large data base, graphics, hard copy, lessons with some provision for interaction that is infinitely expandable with the help of a consultant, excellent documentation available to the user at minimal cost in convenient centres, and a documented history of pedagogical use. This medium is, of course, the book.

There was a time, some years ago, when the so-called 'self-instructional' textbooks were being hailed as a major pedagogical advance which would make teaching more effective and stimulate learning. (I have such a book, written by one of the outstanding teachers in my own field. The only features which reflect its pedagogical approach seem to be the terseness of its very small amount of prose and the large number of problems at the end of each chapter. Many of these are, in fact, multiple-choice questions with answers given at the end of the problem set.) I have been told by the teaching-resource officer of my university that the pedagogical basis of CAI-CAL has not advanced far beyond that of the self-instructional text. I realize that this is a controversial issue.

Experiments with CAI and CAL

It might be instructive to describe some of the experience with CAI and CAL at Waterloo. Nine years ago we joined IBM in a three-year research project called COMIT. Its purpose was to learn as much as possible about writing and using course-specific CA lessons on hardware that had, for the time, an outstanding graphics capability. The project was a resounding success, but in very different ways for different people. For some, it demystified CAI/L. They realized that producing the lessons was an extremely time-consuming process, and that the product sometimes appeared more cute than profound. Some discovered that in the process of preparing a sample lesson they had to penetrate the logical structure of the subject to such a depth that they began to develop an altogether new insight into the fundamentals of their field. For still others, COMIT was the beginning of a lasting love affair with the computer; in one case, this love resulted in the development of a new area of computer applications. However, it seems that the results of COMIT include only one isolated application of CAI which has persisted to this day.

A more comprehensive example is a continuing project in CAI/L in the area of language instruction. The investment over the last six years has been almost exactly $100,000 and 12,100 ph (person-hours). The costs do not include the salary of the principal investigator, or costs of space and overheads. The labour costs have been low because most of the work has been done by co-op students. The output includes lessons in introductory, intermediate, and business French, introductory German, introductory Russian, and a few lessons in English as a second language (ESL). It also includes new tools and programs for writing CA lessons. These tools have proved so effective that the time per lesson has been reduced to an unheard-of 40.6 hours, at a cost per lesson of only $353.

What impact has this project had on language teaching at Waterloo? Hardly any. The following is an excerpt from a summary report by the project's director:

> We have formally tested two groups of programs, the 5 English Language and 10 intermediate French lessons ... Based on the test results I can honestly say our programs do no harm to the students that use them ... From the teacher's standpoint they do not present additional burdens to the people that administer them.
>
> The 50 lessons for the introductory French course are primarily drill and practice, and were designed to reduce the amount of class time used to correct homework. To this end the programs were very successful. They effectively increased the classroom time available for other use by approximately 100 minutes per month.
>
> None of the CAI programs that we have developed has been integrated into the classroom curriculum. This is probably due to the general skepticism on the part of established instructors about new techniques that employ 'high tech', or to a lack of concrete statistics that show a vast improvement by students using the CAI programs.[2]

Issues in CAI and CAL

Given all the difficulties in producing lessons, and the limited experience with home-grown products, why not purchase commercial CAI/L services from established systems (such as PLATO)? Or, why not have one professor invest the thousands of hours required to write CA lessons for a whole course so that other professors can have more time for other things? Aside from the cost, there are several reasons why my colleagues have not pressed for these approaches.

One concerns control over the content of teaching materials. Faculty members generally are not prepared to accept teaching materials uncritically and without any ability to change or interpret them. Some believe that adopting someone else's textbook to support a lecture course is about as far as one can go in this direction. To adopt a CAL package, with which the student would communicate directly, without the professor to interpret the material, would seem to them an abdication of their responsibility as teachers.

There are grounds for such concerns. Some engineering students who use commercial CAD packages in industry while on their work terms seem to accept them uncritically as the last word on 'how things really are'. It takes an effort on the part of faculty members who are concerned about this narrow view to remind the students that these packages contain only models of nature which reflect the state of knowledge when the packages were written, and that they can be incomplete and even wrong.

A further issue concerns keeping the lesson content up to date, as in the case of Waterloo's correspondence-program courses. These courses have a lifetime of four years. The university commits itself to stock four-years' supply of the textbook on which the course is based, as well as of the course notes, visual aids, problem solutions, etc. The course is reprepared after four years, but the professor who offers it often feels the need for major changes before that. Such changes might be difficult to make and expensive if one were using commercial CAI/L packages.

To conclude, perhaps there is a useful role for CAI/L at Waterloo which would make teaching more efficient and relieve some of the burden on the faculty, but my colleagues who bear that burden have not identified it.

THE POTENTIAL FOR REDUCING COSTS

Costs of commercially available software

Software for microcomputers is expensive enough for the individual consumer who buys one copy of each of several packages. At the present time, it can become prohibitive for a university which operates micros by the hundred.

Consider a spreadsheet package that costs $600. This cost represents the purchase price for the current issue – should a subsequent version of the package be required, it has to be bought outright at a new purchase price. If the current issue of the software were to be used by four classes of two hundred students, using four networks each of twenty microcomputers connected to one controller, hard disk, printer, etc., the cost to the university could be as little as $600 or as much as $480,000 depending on the policy of the software vendor. The two extremes in cost represent, respectively, a site licence for the price of one copy of the software and an individual copy of the software for each student. The universities could certainly never afford the latter, and software vendors would not often be ready to accept the former. Yet if the promise of commercial software is to be realized in the university, some compromise arrangement will have to be reached.

To pursue further the hypothetical case of the $600 spreadsheet package, an arrangement in which one copy of the software is bought for each microcomputer would cost the university $48,000. If, on the other hand, the vendor agreed that the single file-server on each network was the only machine which had to be licensed because, in fact, it was the only one in which the software resided permanently, the cost to the university would be $2,400. If the same networks were used for two other software packages, perhaps a project-planning package and a word-processor package each costing the same as the first package, the costs would be tripled. These numbers should be considered together with the initial cost of the networks of about $300,000, as well as the annual maintenance cost of about $30,000.

Costs of microcomputer networks

To give an idea of the costs involved in implementing micro networks, we have made some model calculations based on our experience.

If we were to provide additional computer support for a variety of courses offered to 2000 students such that each student required 2 hours per week of scheduled computer time and 2 hours per week of unscheduled time, we would require 5 laboratories, each with 30 micro workstations on a network. Each laboratory would require a capital investment of about $102,500 for equipment, and an amount for space which could be as little as $18,750 (cost of alterations of existing space at $25 per sq. ft.) or as much as $93,750 (full cost of new space at $125 per sq. ft.). In addition, we would take on an annual burden of $4,500 for air conditioning, power, cleaning, etc. Hardware maintenance would probably average at no less than $7,000 per year.

Each laboratory would require software. We estimate that the cost of acquiring the software and maintaining it for three years would range from $26,000 to $39,000 per lab. In addition, any custom-developed courseware would cost about $2,000 per hour of lesson. For the five labs located in existing space, all of this adds up to about $750,000 up front, and an annual burden of close to $58,000, not including the cost of supplies. (No salaries are included in this total.) Such an investment would have eaten up most of the special designated-equipment grant which Waterloo got from the Ministry of Colleges and Universities in 1983/4, and would have left almost nothing to meet all the other needs for new or replacement teaching equipment.

The potential for reducing per-student costs of teaching at Waterloo by using computers as teaching tools more widely than at present seems very limited. Two important reasons for this conclusion are that the university already operates with an extremely high student-faculty ratio and that we have already implemented just about all the applications of computers as teaching tools that we can afford. This is especially so given that computer-based teaching systems not only require an initial investment for equipment and space, but also a continuing commitment of resources for computer maintenance. Moreover, the implementation of the system is a very labour-intensive activity, necessarily involving a considerable amount of faculty time. At least in our situation, both the people and the financial resources are strained to the limit, and additional applications of computers in education must wait.

It is also unrealistic to believe that substantial economies in teaching can be achieved through some massive substitution of computer-aided instruction and learning systems for faculty and teaching assistants. The technology for delivering the lessons exists, but their pedagogical base is not fully established. And when the technology and pedagogy are both in place, the preparation of the lessons will still be a very labour-intensive activity which will have to involve faculty extensively. The full cost of such a substitution is still an unknown.

All of this adds up to the inescapable conclusion that an expanded use of computers in the teaching function of the University of Waterloo is not going to solve its present funding problems. Rather than reducing costs, it seems that the benefit most likely to be realized from the introduction of computers in the classroom is an improvement in the quality of the educational experience offered to students. The quality of education offered at Waterloo would not be as good as it is if the faculty were not able to compensate to some extent for very large class sizes by enhancing their courses through the use of computers.

UNIVERSITY RESPONSIBILITY IN APPLIED RESEARCH

The third issue put forward for discussion by the organizers of this session concerns the responsibility of the universities to help foster the information-technology revolution through applied research. I find it fascinating that this issue was even raised. Implied is a recognition that the universities are essential agents of far-reaching technological change. Moreover, the reference to some responsibility in this context implies some attribution of a strategic importance to the activities of the universities, at least in this area. I hope that this is indeed the view of the Ontario Economic Council. A good outcome of this conference would be that it also becomes the publicly stated view of the Bovey Commission, of the Ontario and federal governments, and of industrialists and labour leaders alike. We would then have come a long way from the days when research and graduate studies were thought by some in government and business to be little more than sops to the academic ego which had to be tolerated in order to get the masses taught.

Ontario universities have a vital role to play in applied research in information technology as well as in many other fields where they can demonstrate world-class scholarship. The university's role in applied research is unique – it is the one institution in our society which combines the two essential functions of generation of knowledge and the education of people in using it wisely.

Information technology is now widely acknowledged to be an area of strategic importance to Canada, and particularly to Ontario. Its extensive use in the products and processes of our manufacturing industries, as well as in our service industries, is thought to be the key to our international competitiveness and to the maintenance of our high standard of living. This is not just a consideration for the future but also for today. People at Waterloo are now keenly aware of these needs, eager to work toward meeting them, and convinced of the urgency of the situation.

Those Ontario universities, then, that are in a position to contribute to developments in information technology should be given the resources necessary to make those contributions. On this matter, industry and government seem to agree. Important research in information technology has recently been attracting significant industrial support, at a level unprecedented by Canadian standards. The Ontario government has committed resources for at least one important capital project to support such research. It is funding two-thirds of the cost of facilities for a large multidisciplinary group of leading computer researchers who have attracted a particularly heavy concentration of industrial support. In addition, the federal government, particularly through NSERC, has emphasized the need for research in this area and has made some very large strategic grants to universities to support it.

Funding

Unfortunately, however, the system of funding research in Canadian universities is obsolete. The policies governing research grants-in-aid from the government of Canada are an echo of a bygone era, when university research was a marginal activity, carried out only by a small fraction of the faculty whose time could easily be spared and whose modest needs for space and support facilities could be accommodated in one corner of an undergraduate laboratory.

There is no need to belabour the point, in the sense that the problem has been recognized and solutions are being developed. Nevertheless, we are still waiting for those solutions, and at a time when the ordinary budgets of the universities are already under pressure. It is important to remember that when an authorized officer of a university signs a faculty member's application for an NSERC grant, the university becomes committed to certain costs of that research which must be borne from its ordinary operating budget. Such costs include the grantee's salary, the cost of space used for the research, heat, power, light, a basic level of support services in the laboratory, library services, secretarial and administrative support, etc. These cost commitments are likely to be large when the grant is large, and can be unexpectedly large when the grant is both very large and in a fast-developing field.

The following example illustrates the severity of the problem. In 1983, the VLSI (Very Large-Scale Integration of computer elements on a chip) Group at Waterloo received a strategic grant of $1.64 million for three years from NSERC. At that time, it was apparently the largest strategic grant ever made. Propelling the grant application were all the essential factors: strategic importance of the field, an important research project, and an excellent record of achievement by the applicants. The university supported the application, and committed itself to support the work.

The grant was received, the university is supporting the researchers, and excellent work is being done. However, the amount of university support that has turned out to be necessary is enormous. The moves which had to be made to prepare space for the project have had a disturbing effect on the operations and morale of a department which had nothing to do with the application, and resulted in a group of graduate students and faculty having to set up offices in portable buildings which now occupy the engineering quadrangle. The task of solving these problems diverted time and energy from other activities which were also being supported, although to a much more modest degree.

Further, the out-of-pocket expenditures incurred by Waterloo as a result of receiving the VLSI grant have amounted to a total of $223,600 as of the end of September 1984. This sum includes $67,000 for air-conditioning the computer rooms, $80,000 for the portable buildings and space alterations, $14,000 for just part of the computer maintenance, and $54,000 over two years to pay for the replacement of the teaching which the Principal Investigator no longer had time for. These expenditures have severely cut down on the available support for other activities.

It should not surprise anyone if the University of Waterloo chose not to accept any more research funding on these terms. It is regrettable that the funding system may have caused it to limit the scale of its activities in areas in which it is uniquely capable of making a contribution of strategic importance to Ontario and to Canada.

As I mentioned earlier, the shortcomings of our system for supporting applied research in the universities are widely known and generally acknowledged. The implementation of an adequate funding system is a matter of extreme urgency if the universities are to meet their responsibilities in applied research.

CLOSING REMARKS

Many important and interesting subjects dealing with the use of information technology in teaching could not be included in this paper. For example, the impact of the new technologies on continuing and distance education is a subject for a whole conference. Much more could also be said about applied research in the information technologies.

Waterloo is a university which has a great deal to offer in these areas and is ready to contribute. But we are able to contribute to only a small fraction of our potential because of the lack of resources.

I welcome the opportunity to make this presentation before an informed and influential audience. I hope that the issues raised here will come to the attention of the Bovey Commission and of all others who are in a position to do something about them.

NOTES

1 The cost per student-term course is the cost attributed to one student enrolled in one course for one (four-month) term. For example, 600 students, each enrolled in one computer course for two terms, represent 1200 student-term courses. At $60, the direct cost of supporting that teaching is $72,000.

2 Hennig, C., Summary report submitted to the Waterloo Arts Research Group, September 20, 1984.

Comments

John S. Daniel

Dr. Brzustowski's paper is an excellent treatment of the development of academic computing on Canadian campuses. He has given us a useful taxonomy of computer uses, provided a refreshingly quantitative analysis of the implications of extending computer availability, and exploded some myths about cost savings. In discussing all these issues we must remember that the use of computers is in its infancy. This is the first generation of university students to arrive on campus with some computer literacy. All subsequent generations will be computer-literate if not computer-fluent. As an intensive computing environment becomes a routine feature of campus life, our current analysis of prices, methods, and acceptance will change.

Impact on teaching mechanisms

Some comments on distance education are in order since Dr. Brzustowski identified this as a development of importance but did not review it in his paper. Distance education is the most important development in higher education since the Second World War. It has been used to expand access to universities in Europe. The UK Open University is the largest university in Britain, and similar universities now exist in Spain, Germany, and the Netherlands. At the present time, the fastest growth is taking place in the Far East, where one million university places have been created in the last decade in in three institutions alone (Central China TV University: 750,000

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students; Sukhothai Thammathirat Open University, Thailand: 200,000 students; Korea Air and Correspondence University: 120,000 students). Each of these institutions is still expanding briskly.

In contrast to the economics of conventional universities, which are those of a cottage industry, distance institutions have an industrial economic structure. High initial investment is combined with low unit costs when numbers are high. With 50,000 students, the UK Open University could produce B.A. graduates at one-quarter of the cost of traditional universities. The Thai Open University is so cost-effective that long before it achieves its target of 500,000 students by 1990 it will be self-supporting on (very modest) tuition fees alone.

In an earlier session, Dr. Astin provided three useful criteria for assessing excellence and these can be applied to distance education. Measured in terms of reputation, open universities are growing rapidly in prestige. Both the UK's and Thailand's open universities now lead their countries in terms of the acceptance rate of their graduates into graduate schools at other universities. In addition, the public visibility of their broadcast and print materials constantly enhances their reputation, and the sheer numbers of students ensure they are well known.

If excellence is measured in terms of standard measures of input, however, distance universities are anything but excellent. They cost less and often have open-admissions policies. Only in terms of faculty can they lay claim to the same quality as conventional institutions under this criterion.

But in terms of Professor Astin's criterion of talent development, those that 'add the most value', open universities win the excellence stakes easily. Since admission is often open and graduating students end up with the same qualifications as those elsewhere, the average open-university student will have travelled a greater academic distance than his or her campus counterpart.

Distance education is of most interest to countries with limited resources and that have either student numbers significantly in excess of the places available in conventional institutions or many adult students. It can also be used to make a whole university system more cost effective. More places can be created on campus by requiring all students to do a part of their programs at a distance. This is the pattern in the USSR. It could easily be adopted in Ontario using the correspondence courses available at the University of Waterloo and elsewhere. With this in mind, it is a curious paradox that we offer the easiest form of education – that with the highest degree of personal contact – to those students who have performed best in the past. Logically it should be the other way around.

Ownership of equipment

The Dutch economist Max Geldens has pointed out that personal computers are re-establishing a link between capital and labour at the individual and small-group level that existed in the agricultural era but was broken by the industrial revolution. Encouraging students to make personal purchasing decisions about hardware and software may be helping to prepare them for later work independently of any cost advantages to the university.

The nature of education

Information technology poses in stark form a classic question about education. Is the fundamental relationship in education between student and knowledge or between student and teacher? If it is the former relationship, technology can help greatly – and at the low costs characteristic of industrial economics. If it is the latter relationship, then our classrooms, with their cottage-industry economics, are secure. The best answer, however, is that education is a relationship between student and knowledge that is mediated by a teacher, so that a partnership between technology and teachers is required.

Decentralization

Another way of looking at the opportunity offered by technology is in terms of the locus of decision-making. We have heard arguments, to my mind unconvincing, to the effect that the only proper locus of rationalization decisions is at the level of individual universities. It may be more important to note that by 1990, many Ontario homes will be well equipped with educational technology such as VCRs and microcomputers. No doubt software will be developed to enable people to study many subjects at home. Will this trend bypass our universities, or will they use it to extend the academy?

Comments

Brian Segal

I agree with Tom Brzustowski that there is little chance information technology will reduce per student costs.

I also share the view that quality of education will be enhanced by it. Let me elaborate.

For centuries, a central goal for universities has been to expand the boundaries of knowledge and to search for techniques that will accomplish this goal. Today, a growing number of academics and universities are committed to experimenting with ways through which computers and information systems can enhance thinking and learning and encourage new conceptual and intuitive understandings in students and faculty.

These experiments are not limited to engineering and the sciences but include the humanities and the social sciences as well. For example, the scholar's workstation project at Brown University covers a dramatic range of activities:

> Scholars in all disciplines will have access to graphical editorial painting systems, text processing utilities, VisiCalc like spread sheet/table-generation facilities, graphing packages, mathematical and foreign language composition facilities. In the area of fine arts, art history slides (either digitised or on video disk) will allow posting of pictures into electronic documents. Studio artists will be able to experiment with electronic painting systems much more 'forgiving' than ink and paper or oil and canvas. Musicians will be able to conduct musical instruction, analyse performances, retrieve musical

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> scores by graphically specifying a pattern of notes, compare two scores, and create musical concordances. (Shipp et al. 1983)

Excitement about the ways that computers can expand knowledge and its application derives from a basic curiosity as to how the computer can be used as a tool – as a means, not an end – by the instructor when judged valuable. It can be compared to a book or audio-visual presentation – like either, it can be used to convey wisdom as well as trivia. Yet it maintains an essential uniqueness that is tied to its interactive capability. Students can benefit greatly

> from seeing dynamic, highly graphical illustrations of concepts . . . we want students to be able to interact with the lecture material while it is being presented to them . . . [and] be able to benefit from personal experimentation with the new material during the primary lecture on that material – while the instructor is still immediately accessible. (Shipp et al. 1983)

Fears about 'Star Wars' educational processes are many. The changes required to incorporate these tools in curriculum content, design, and delivery are understandably a cause for concern, as traditional pedagogical approaches and the values they embody may require significant modification.

Traditional beliefs about how people learn and student-faculty interaction modes will need to be re-examined. Given that methods of scholarship and teaching have not changed significantly over the last century, loyalty to and familiarity with these methods have caused many to defend them and to use their longevity as a rationale to oppose any significant alteration in the future.

Other fears relate to concerns about faculty obsolescence, job security, and demands on university budgets.

It is however a myth that computers, software, or artificial-intelligence expert systems will replace faculty. According to Alexander, 'expert systems will serve to multiply the value of real experts by putting some of their knowledge at the fingertips of nonexperts. . . '. He goes on to say that 'the computer works mechanically, manipulating arid symbols that it recognizes but does not understand'. Computers do not

> deal in the rich associations, metaphors, and generalizations that language evokes in profile and that constitutes the essence of meaning and thought. Thinking consists less of logic and recognizing symbols than it does of mental images and analogies – things no one has been able to define in terms computers can grasp. So while expert systems can sometimes display an amazing semblance of human expertise and logic, it is an empty mimicry, the limited repertoire of a clockwork doll rather than a respectable simulation of human intellect. (Alexander 1984, p. 106)

Given the proliferation of computing in all areas of the curriculum – including such nontraditional users as the humanities, and such professional programs as nursing, social work, environmental health, and others, faculty upgrading and training is becoming a terribly important issue for universities.

While existing sabbatical and leave policies provide faculty with the opportunity for upgrading, this may not be sufficient to respond to the rapid changes in technology. University-industry links may well need to be expanded so that more faculty will be able to benefit from short-term leaves in industry in order to gain 'hands-on' experience working with the application of newer technologies in industrial and business settings. Expectations that faculty on leave must continue to publish results of their work may have to be modified, as direct industrial experiences do not always afford the opportunity for immediate research, particularly if the experience focuses on the upgrading of knowledge and skills in a particular area of technology application.

Active participation in research, both basic and applied, also enables faculty to maintain currency and to enhance their subject-matter competencies. A greater emphasis on industrial research may be required in certain fields and more faculty should be encouraged to participate in order to integrate industrial problem-solving issues and methods into curricular changes.

Individually and collectively, universities will need to encourage industry to forge closer links and to participate in interchange programs so as to assist universities in increasing their adaptive capacities and to assist themselves in maintaining their leading edge.

Decision-making complexities

The proliferation of demand for centralized and decentralized computing by all or nearly all faculties presents both problems and opportunities for academic and administrative decision-making. Meanwhile, the speed with which technology is advancing is transforming curriculum change from a medium-to-long-term process to a short-term one.

In order for curriculum change to embody, analytically and practicably, the changes in technology, the process of change must be telescoped without destroying curriculum integrity and the deliberation and collegial mode associated with curriculum change. This in turn demands more faculty time both at departmental and senate levels to ensure curriculum modifications are consistent with academic philosophy and principles.

A sensitive balance must be struck between curriculum changes which incorporate computing as a learning tool into ongoing courses and curriculum changes that are largely driven by technology. In the latter case, adequate academic safeguards are required to ensure that academic integrity and curriculum quality are maintained and enhanced. Universities must avoid wholesale curriculum change in which the desire to introduce technological tools distorts the value and conceptual basis of curriculum design. Departmental and senate debates on the appropriate balance and an overall curriculum philosophy should be encouraged even if they create conflict and slow the educational-change process. Academic administrators must also encourage the curriculum-change process to balance pressures for innovation with concerns for stability, action with quality, and ultimately change with fiscal equity and responsibility.

As demands for computing grow, so does computing's share of capital and operating budgets. Conflict generally exists in the allocation process between expectations for computing facilities and demands for resources for other types of capital equipment. There is often a paradox between the expectations of departments to acquire computing resources, on the one hand, and an unwillingness to be more flexible on their perceived need for other capital equipment, on the other. Since in many institutions the largest share of the computing budget is controlled centrally, departments often believe they must compromise their autonomy for the good of the institution. While they may do so, it is done, more often than not, reluctantly.

For university administrators attempting to manage restricted budgets, accommodating the various demands for computing and other resources is becoming more and more difficult. As software development for microcomputers makes them more user-friendly, departments which in the past placed little or no pressure on the computing environments are now doing so quite intensively. This in turn results in much more competition for a scarce and expensive resource.

While there are no easy solutions, the management of computing development must be part of and integrated with academic, fiscal, private-funding, and physical-resource planning. Because of the significant tradeoffs that will be required in the planning process, faculty must be intricately involved in the choices and options.

The next plateau

Over the next few years, it is likely that most institutions will be forced to accommodate increasing demands for computing power and time through decentralized solutions. Departments and faculties will undoubtedly be put in a position of having to make tradeoffs between computing and other capital requirements and between support resources for localized computing and such resources for other academic functions.

While encouraging decentralization, academic administrators must maintain central control of the overall computing-planning process to ensure optimal compatibility, efficient technical-support resource utilization, and effective use of space.

One of the constraints on the decentralized computing model is the lack of space. The capacity to adapt to changing technology requires sufficient latitude to modify or increase available space.

Every time a new microlab or terminal room is created, another general-purpose classroom is removed, which for overcrowded institutions can be a serious problem. The trick will be to make appropriate longer-term solutions that suit the needs of the university and yet somehow overcome the immediate constraints presented by the space problem.

Ultimately, I would suggest that computing development in the future will focus on decentralized, networked solutions as opposed to central, time-shared environments.

As we look at curriculum enhancement in the future, computerization will afford many new opportunities to enrich both in-classroom and independent learning. The advent of interactive-classroom environments will enable professors to use such techniques as passive and interactive demonstrations, monitored instruction, simulations, and interactive graphics. Since much learning occurs outside of the classroom, the computer will permit all students to manipulate information, correlate and retrieve data, communicate with many different users and data bases, and develop new conceptual approaches to knowledge development and problem-solving. Given that student-faculty ratios are increasing, some compensation for larger class sizes will be provided by the use of computers so that quality of education can be sustained or enhanced.

As long as the benefits of the computer as an instrument of learning are combined with the best pedagogical methods, and as long as curricular substance is effectively balanced with the learning process, the next plateau will be exciting indeed.

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Comments

C.M. Williams

I'm a little surprised to be here. I'm not at all sure that I'm qualified to comment on the subject at hand. I did graduate from university once, but that was so long ago as to be no longer relevant. And while I also happen to be in the computer business, I have never written a computer program, so there may be some question as to my qualifications in this area as well. However, I will try to provide a businessman's viewpoint of the subject at hand.

I have no fundamental argument with the position presented in Dr. Brzustowski's paper, with the possible exception that it focused too much on computers specifically. The world of communications – voice, data, networks – and all that such implies may ultimately play a much larger cost role in universities than the computers themselves.

My difficulty with the issues surrounding the topic of universities and the information-technology explosion relates to the premise on which they are based; i.e., that the fundamental form of the university – that of a central plant with little or no interaction with other similar plants on matters such as course development – does not change. Dr. Brzustowski's well-written paper deals, as I see it, with the university of the 1960s, not with the university of the future that can truly adapt to, and take advantage of, the computer age.

This issue, of course, relates to the much broader question of funding of higher education. Can we afford our ten educational systems in a country of 25 million people, and 19 or 20 institutes of higher learning in a province of some 7 million people such as Ontario?

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At the risk of falling into what Dr. Brzustowski correctly identifies as sweeping generalization, I would argue that the information-technology explosion offers an opportunity for a new look and for potential rationalization of a system that today is spread far too thinly over far too narrow a base for it to be as effective as we wish, and more importantly, need it to be.

Dr. Brzustowski points out that use of computers in other than computer-science disciplines often only arises when there is a faculty member who knows how to implement them; and that in one case, development of a particular software program was 'the principal scholarly activity of the faculty member for about a year'. In how many Ontario universities is exactly the same process, in the same faculty, taking place? With what results from a quality standpoint? And at what overall system cost?

Dr. Brzustowski's paper also alluded to what we in the computer business describe as the NIH factor. NIH stands for 'Not Invented Here'. I can understand the desire of a professor to put his own mark and his own character into his own course material, but I'm not at all sure that the system is able to afford it any longer.

While the concept of individual freedom for everybody to do exactly as he wishes and as he sees fit under his own rules and in his own environment is admirable and desirable, I would submit that it is no longer practical, and that some hard-nosed, business-like management decisions need to be made from a priority standpoint.

I would also submit that we do not have, necessarily, a funding problem with regard to individual or specific universities. Rather, we have a funding problem with respect to the overall university system. Viewed from a fairly distant and objective perspective, it would appear that we are simply trying to do too much for too many and have therefore spread our available resources over a base which we can no longer afford. One might also question whether it's a base which is still desirable for us to afford.

In summary, let me use a real-life example to indicate what I mean by the outdated form of the university and how I believe it must change in order to adapt to the information-technology explosions.

Geac Computer Corporation happens to be in the banking-automation business, which means that we use computers to handle all of the retail-banking features such as chequing and savings accounts, loans, term deposits, RRSPs, etc. Given appropriate input, our computer system can provide you, for example, with a loan proposal for any given circumstance, including the monthly payment which will need to be paid over the term of the loan.

On more than one occasion we have discovered that loan officers were still double-checking the accuracy of the computer by poring over a book of compound-interest tables! If any institution, including a university, uses computers and communications (and any of the information technologies) only by superimposing such on top of an existing *modus operandi*, then, in truth, costs will not only not decrease, but significantly increase.

We need to look not at an individual institution and how computers can be utilized in that individual institution, but at the much broader question of how computers and communications and information technology can be utilized to solve some of the problems of the higher education system as a whole. We must deal with questions of strategy and the automation of some of the systems and functions performed within our university environment, and not solely with the use of computers in universities.

We need a strategic, long-term approach to the funding of our university system, including the overall use of modern information technologies within them, rather than an answer to a specific question of how to make use of computers in a particular institution.

Ontario universities in a broader context: the need for a national strategy in Canadian higher education and research

Thomas H.B. Symons

In order to stimulate a public response and also to assist interested members of the public in preparing their response, the Commission on the Future Development of the Universities of Ontario (Bovey Commission) prepared a 29-page discussion paper on the range of issues and alternatives which the Commission had under consideration. It is the final paragraph in their paper, calling for 'a Canadian perspective', that seems to me to be both the most important and the most encouraging of the several hundred paragraphs in the discussion paper (Bovey Commission 1984a, p. 25).

It is surely unusual for a provincial commission to strike this note as its concluding theme in its call for briefs, and I very much hope that this occurrence is as significant as it seems. It is immensely important, and particularly timely, that the Bovey Commission has put forward a strong statement about the need for those of us who happen to live in Ontario, or in whatever other province, to consider the major questions about higher education in their broader Canadian context. While dealing with the provincial questions that must be dealt with, the Commission has rightly appealed to the postsecondary institutions of this province to play their full part in the wider academic life of the country and it has, subsequently, couched a number of the recommendations in its *Report* to the Ontario government in such ways as to enable them to do so (see Bovey Commission 1984b).

THE BALKANIZATION OF CANADIAN HIGHER EDUCATION

In a thoughtful paper prepared for the Ontario Economic Council's

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1984 conference on federal-provincial fiscal relations, A.W. Johnson (1985a) concluded that Canada has now 'probably gone further in the direction of fiscal decentralization than just about any other nation in the world'. To this might be added the observation that Canada has also probably gone further in the direction of the decentralization of higher education than just about any other nation in the world. We have, in the past 25 years, moved a long way from the situation of which one wag could say, in 1959, that the longest academic procession in Canada was in Ottawa, 'up the hill from the Chateau Laurier to the Parliament Buildings', to ask the federal government for financial assistance for the universities.

Perhaps that academic procession was no more desirable than many others. But it is surely time to consider carefully the consequences of the balkanization of higher education in Canada that is resulting from the absence of national goals, national standards, and national programs in which the whole postsecondary community of the country can participate and from which our entire postsecondary community could draw strength. By the term 'national' I do not, of course, mean federal. What I am talking about is the need for national strategies in higher education that could result from consultation and co-operation of a more substantial and sustained order than now prevails amongst the universities, within the academic community, amongst the provinces, and between the provinces, the universities, and the federal government. There have, indeed, been some significant and substantially successful endeavours – for example, in the Maritimes and in Western Canada, and sometimes through the Council of Ministers of Education Canada (CMEC) – to foster and co-ordinate higher-education policies and programs by creating continuing arrangements for consultation and co-operation. However, I would suggest that it is time to strengthen such interprovincial co-operation in postsecondary education and to broaden it by the inclusion of appropriate participation by the educational community and by the federal government in order to develop truly national strategies for higher education and research. It is time for Canadians to draw on their experience and to exercise their creative imagination to devise the co-operative structures, the procedures, and the formal and informal arrangements that can make our higher-education resources more effective for the good of our total national society, as well as for its constituent jurisdictional components.

In this effort to think through and to pursue appropriate national goals, there is, I think, an opportunity for the government and universities of Ontario to make a special contribution and perhaps even to take a lead in establishing a new and co-operative approach to the questions of higher education in Canada, along the lines of the initiative taken by Ontario in convening the Confederation of Tomorrow Conference in November 1967. Someone has to take the lead in bringing about appropriate national strategies in higher education, and perhaps it would be better if it were not the federal government. However, if such a lead does not soon come from a provincial quarter, then it will become incumbent on the federal government to act in the national interest, rather than to allow that interest to be damaged by default.

SOME CONSEQUENCES OF THE ABSENCE OF A NATIONAL STRATEGY

In speaking about the need for a national strategy in Canadian higher education and research, I want also to venture a comment about some of the adverse consequences of our present federal-provincial arrangements for funding higher education. I hasten to say that, in view of the papers of Professor Peter Leslie and Dr. Enid Slack, I do not intend to say a word about EPF – or even ESP. What I do want to do is to suggest that, quite aside from the financial content of such arrangements, there are also educational and psychological consequences. It is becoming evident, I think, that one of the psychological consequences of the provincialization of our universities has been a narrowing of the horizons of many of our university planners and leaders because of the need imposed on them to focus so intensively on their principal paymaster, the provincial government and its agencies. This, in turn, has somewhat similar educational consequences, in causing universities to see themselves in provincial terms, and often, albeit unconsciously, to limit their academic horizons. Going further, I think this situation has contributed to an unfortunate public misperception of universities as something less than centres for teaching and research that should reach out to, and receive from, a much wider regional, national, and international community than the province in which they are located.

These psychological and educational consequences of provincialization are unfortunate enough in a large province with many universities such as Ontario. But they are even more significant in smaller provinces with just one or two or three institutions that are thrown back on their own limited resources in a narrow, circular dialogue amongst themselves and with their respective provincial-government officials.

In this provincial-minded situation, it is as unsurprising as it is regrettable that there is beginning to be talk in several provinces about putting up barriers to student mobility within Canada by establishing higher fees that will discriminate against Canadian students from other provinces. It is, in fact, already more difficult in many instances for a Canadian student to transfer from the higher educational system of one province to that of another province than it is for university students to move from one country to another in Europe.

THE FREQUENT IRRATIONALITY OF 'RATIONALIZATION'

The University of Waterloo in its *Response* to the Bovey Commission stated flatly and with splendid directness, 'the notion of regional universities is terrible' (University of Waterloo 1984, p. 10). I certainly concur with that view and would simply extend it to make the point that, for similar reasons, the notion of provincial universities is not much better. In particular, I want to underline the need for caution and common sense in the recurrent talk about 'rationalizing' the university system in Ontario. If rationalization of Canadian higher education makes any sense, it does not make much sense at a purely provincial level. The goal of rationalization is said to be the elimination of unnecessary and undesirable duplication. But the reality of higher education is that a good deal of duplication is necessary and desirable. It is, for example, desirable and even essential that there should be at every university – if indeed it is to be a university – a broad spectrum of the undergraduate courses that constitute a liberal education. The fact that active participation in current research informs and vitalizes the teaching of a university instructor points to the need for some research and graduate work to be fostered at every university. It is not, of course, possible (or even desirable if it were possible) for every university to attempt to teach and research on all fronts. But in finding appropriate roles for each university it is not enough to think only in provincial terms. A decision about the appropriate role in teaching and research for a particular university, one that might make some sense if Ontario were an isolated island, may often be wrong – or at least not the best decision – in terms of maximizing the opportunities for young Canadians, whether they live in this province or in some other part of Canada.

The university of which I am a member of faculty, Trent University in Peterborough, recently hosted a conference of scholars engaged in research about the properties and problems of snow and ice. The context for such research is not simply provincial. It is, as it must be, national and even international. Trent shares its research interest in this field with a number of other Ontario universities. But the community of universities active in the field does not coincide with the Ontario university community. It includes some universities in this province, but not others. And it includes a number of universities from most of the other provinces of Canada as well as from a score of other countries.

Similarly, with Trent's interests, for example, in Native studies or freshwater biology or international development studies, the community of concerned institutions is not restricted to one province. The lines of scholarly communication and co-operation lead out of Ontario to universities that share these interests in other provinces.

In the same vein, the planning and operation of programs at the University of Ottawa, for example, may often involve considerations in the context of the francophone universities of Quebec. What is going on at universities in Manitoba may at times be more relevant to Lakehead University than academic activities elsewhere in Ontario. But context is more than propinquity. In higher education it is concerned with the linkages that arise from shared academic concerns. For each particular academic field there is a different community and a different context that has little to do with Queen's Park or the political view from Toronto.

The academic area in which I do a part of my teaching and research, Canadian studies, is an interdisciplinary area that reminds us by its very name of the inadequacy of provincial horizons.

Thus, while the Bovey Commission, like many similar commissions that have worked in other provinces, is understandably concerned with questions of balance and differentiation within the province in regard to such matters as undergraduate and graduate programs, teaching and research, the liberal arts and social sciences vis-à-vis the sciences vis-à-vis the professions, types of institutions, centres of specialization, and so on and on, there is still a far greater need for these and other questions to be considered in a wider context.

DUE PROCESS VERSUS FEDERAL-PROVINCIAL SLANGING MATCHES

The recent imbroglio surrounding the initiative of the federal government in funding, and in so doing fostering a number of centres of specialization by grants totalling some twenty-five million dollars to selected universities across the country, illustrates both the need for a national approach to advanced study and research and the great difficulties in achieving a national view upon which such an approach must be based. To be successful, such initiatives must be truly national, not just federal, and they must arise from a genuinely cooperative spirit amongst the provinces, amongst the universities, between the provinces and the universities, and between both these bodies and the federal government. The weakness in the well-intentioned but nearly disastrous federal initiative to fund centres of specialization was not so much that it was turned into a political exercise, although it certainly was in part, despite the best efforts of senior officials in the Education Support Branch of the Department of the Secretary of State, as that it was seen to be a unilateral political intrusion by one level of government into provincial and university affairs with the consequence that suspicions and distrust were aroused that had little to do with the by-and-large desirable academic projects that were receiving support. Such fears and resentment were further fueled by the absence from the granting process, in this instance, of any recognizable system of peer evaluation involving the research community. The lesson from the episode must surely be the need for such initiatives to be adequately rooted in both a political and an academic process.

Given the complexity of our country's history, culture, and constitutional arrangements, and given the extraordinary sensitivity of federal-provincial and interprovincial relationships, we must recognize that in higher education, as in many other fields, process can be as important as product; that when policies or programs extend beyond one jurisdiction, then how they are done becomes as important – sometimes even more important – than what is done. In fact, process must in itself be seen to be a matter of high policy, as much so as the actual programs or policies that one may wish to implement. If, in communications, the medium is the message, then, in interjurisdictional matters in Canadian postsecondary education, the process is itself often the message.

I am also concerned about the effect, over time, of the slanging matches that seem to be the *modus operandi* of so much of federal-provincial relations in postsecondary education. It is an unedifying spectacle that demeans both government and higher education in Canada. The rhetoric is, of course, almost always subjective. The trespasser, the villain in any particular constitutional uproar over education, is in the eye of the beholder. The perception of wrong-doing depends almost entirely on who is speaking, on where they stand, and whence they take their perspective. The speakers are usually politicians of one sort or another who have their territory to defend – whether it is physical or psychological territory, or both. The stands they take frequently do not reflect the views or the best interests of ordinary citizens, nor do they necessarily serve the best interests of higher education.

The long-term consequences of this process, for Canadian higher education and for Canadian federalism, deserve some thought. The politicians and bureaucrats, by their behaviour in disputes about the educational system, are setting a poor example for those within the educational system. As public figures, they are themselves educators through example, and they are giving lessons in incivility and frequent irrationality that must some day show in the behaviour of their successors and that already shows in the attitude towards them of many university students and faculty members.

INCENTIVE VERSUS ADDICTION

Unfortunately, the incentive to take a cross-Canada perspective in higher education is not very strong, and the increasingly provincial orientation of our universities in their administrative and financial operations has made it less strong. The erosion of this incentive is one of the psychological and practical consequences of the balkanization of our education system. At this point, a positive effort is needed even to re-awaken the interest of universities in the search for alternative sources of funding, such is their addiction to the provincial teat. Yet there is the possibility of much greater support for higher education from the private sector. One of the prices we pay for the present complexity and obscurity of federal-provincial relations in postsecondary education is that this situation positively deters private donors. Private donors are not clear about what is being paid and by whom and for what. The absence of clear data and of readily intelligible lines of responsibility leaves uncertain the real needs remaining and the appropriate role for private-sector support.

Another consequence of the uncertainties and absurdities in the grey areas of federal and provincial responsibilities in the funding of postsecondary education is that university administrators are so utterly preoccupied, exhausted, and frustrated by their task of divining and massaging the government funding process that they have little time or energy left for the further hard work of raising money from the private sector. Yet successful fund-raising from the private sector is itself a high art that requires exemplary skills and patience from university leaders supported by institutions that can mount properly sustained and professional campaigns for this purpose.

THE FEDERAL GOVERNMENT'S INVOLVEMENT IN HIGHER EDUCATION

Much the most important area, however, on which university leaders need to focus in their inescapable quest for financial support for their institutions is the federal government and the snarled relationships in higher education of that government with those of the provinces. Despite the ostensible disengagement of the federal government from postsecondary education through its adoption of financial transfers for this purpose to the provinces, it is in fact hugely and profoundly involved in higher education. Higher education is financed to the extent of more than fifty per cent out of fiscal resources that have been provided by the Parliament of Canada. In 1984/5, the federal government is providing $4.2 billion in cash and tax transfers to the provinces, under the Established Programs Financing arrangements, to support postsecondary education in Canada.

Yet the mythologies persist, cultivated by some federal and provincial politicians alike, that postsecondary education is a purely provincial matter. On the contrary, there is a massive and pervasive federal presence in higher education: in basic funding; in research funding; in professional and training programs; in a multitude of scholarship, bursary, and student assistance programs; in, for example, northern studies, Native studies, ocean studies, Canadian studies, multiculturalism, bilingualism, and dozens of other special areas; in international relations; in military studies; and in many other fields. As the Commissioners of the Organization for Economic Co-operation and Development (OECD) noted with courteous bemusement in their examination of Canadian education, we are remarkably adept at doing one thing while pretending to do another (OECD 1976). Less politely put, the realities of federal-provincial funding of higher education are so far removed from the cosmetic public explanations of who is responsible for what that the country is living an elaborate lie in this important area of its national life. Perhaps it is a harmless conceit, or possibly it is a harmful deceit. Is it, in any case, one of the lessons that we wish to convey to those who study in our educational institutions?

SHOULD THE FEDERAL GOVERNMENT BE INVOLVED IN HIGHER EDUCATION?

Even when one acknowledges that, contrary to much constitutional and political rhetoric, the federal government is massively and often directly involved in higher education, the question may fairly be asked: should it be involved? Or should our higher-education affairs be conducted on a much stricter interpretation of the constitution, which seems to suggest that this should be an area of exclusive provincial jurisdiction. Such is the importance of education and research, and the resulting knowledge base to any society, that the answer to this must be the same as the answer to the question: are we to be a coterie of poorly related, separate jurisdictions or a country?

The national interest simply does not allow for the withdrawal of the federal government from the field of higher education. Apart from the fact that a tax-raising government cannot divorce itself from the responsibility to account for the use of the money it raises, nor feign disinterest in the results of the extensive funding it provides for post-secondary education, there are legitimate and unavoidable federal interests in higher education relating to its role in ensuring that the country has adequate supplies of highly qualified personnel, that there is some equality of opportunity for young Canadians regardless of where they may live, and that there is a development of the knowledge base that is required for economic growth and prosperity and for national sovereignty.

EQUALITY OF OPPORTUNITY IN HIGHER EDUCATION

The evidence indicates that there has been a re-emergence of inequalities since the middle 1970s in the opportunities available to Canadians in many areas of education, depending upon the province in which they are located (CTF 1983). The forces making for an equalization of opportunity appear to be somewhat weakened and less effective. The grounds upon which such judgements can be made are invariably subject to dispute and interpretation. Nonetheless, data available from Statistics Canada indicates that full-time post-secondary enrolment as a percentage of the 18-to-24 age group varied in 1982/3 from a low of approximately 15 per cent in Alberta, British Columbia, Newfoundland, Prince Edward Island, and Saskatchewan, to a high of nearly 28 per cent in Quebec and more than 23 per cent in Ontario (Statistics Canada 1983a, Table 28).

Significant differences in the quality and extent of postsecondary opportunity available to young Canadians are also indicated by the disparities in expenditures, by province, on higher education on a per student basis as well as on a per capita of population basis (Statistics Canada 1984a; Cat. 81-204). In 1982/3, expenditures per full-time-equivalent (FTE) university student varied from about $6,700 in P.E.I., $6,900 in Ontario, $7,000 in New Brunswick, and $7,100 in Manitoba, to $9,000 in Alberta and $9,500 in British Columbia. Expenditures on university education per capita of the total provincial population varied from approximately $97 in P.E.I., $132 in B.C., and $145 in New Brunswick, to $205 in Nova Scotia.

Such disparities are even more pronounced at the community college level of postsecondary education (Statistics Canada 1984b and unpublished data). In 1982/3, expenditures per full-time student varied from approximately $5,500 in Quebec and $6,300 in Ontario to $14,200 in New Brunswick and $14,700 in Saskatchewan. Expenditures on college education per capita of the total provincial population varied from approximately $20 in Manitoba and $21 in Nova Scotia to $126 in Quebec.

There are also notable disparities in the tuition fees charged to Canadian university students depending on the province in which they study (Statistics Canada 1983b, pp. 14-17). A student in arts, in 1983/4, paid fees of approximately $500 in Quebec but more than double that amount, approximately $1,200, in Nova Scotia. Tuition fees in other provinces varied widely over the range between these two extremes. Similar disparities between provinces in tuition fees existed in other academic areas, including agriculture, architecture, commerce, dentistry, education, engineering, household science, law, medicine, music, science, and graduate studies.

The discrepancies that now exist across the country in the public support given by the provinces to education, including postsecondary education, are so great that they can only lead to serious and regrettable differences in the educational, cultural, social, and economic opportunities available to Canadians. They point to profound inequities in our educational system. The Council of Ministers of Education in Canada (CMEC) may have achieved some kind of equality for ministers of education, but they have done little to achieve equality of opportunity for students across Canada.

THE NEED INTERNATIONALLY FOR A NATIONAL STRATEGY

If our complicated federal-provincial financial and jurisdictional arrangements for higher education and research are puzzling even to interested Canadians, consider the confusion and the problems they must cause for colleagues and observers in other countries. Consider, too, the difficulties that the complexity and uncertainties of these arrangements must cause in our international academic relations. I have had an opportunity over quite a few years to observe this phenomenon, and the results are often quite bizarre. There has, for example, been frequent disarray in selecting delegates and preparing for international academic meetings. There have been international conferences at which members of the Canadian delegation have fought amongst themselves, in the public sessions of the meetings and in front of the other delegates, over who was the official spokesman for Canada and what was the Canadian position on the subject under discussion. For some conferences, Canadian delegations have been improperly prepared because their nomination was delayed until the last moment while the infighting went on amongst the provinces and between the provinces and the federal government as to who should go and how the delegation should be made up. On some occasions, members of such delegations have not had a single meeting, not even a briefing session, before leaving Canada and have, in fact, met for the first time at the conference. The sheer size and unwieldiness of Canadian delegations, arising from a kind of log-rolling interprovincial, federal-provincial approach to composing the delegations, has sometimes been striking, with ten to twelve or more official Canadian delegates and observers at a conference where countries such as the United Kingdom, France, or the United States were represented by a delegation of perhaps half that size.

Some events surrounding the Commonwealth Education Conference in Cyprus in July 1984 illustrate the difficulties that the ambiguities and lacunae in our federal-provincial postsecondary arrangements pose for Canadians and foreigners alike. At the conference, there was an important anouncement to be made: Canada was increasing the number of Commonwealth Scholarships that it would award annually from 300 to 500. The announcement of this very substantial Canadian decision was received with acclaim, and thirteen other countries declared their intention to follow suit. Although this Canadian decision was made public in Cyprus it was not, and still has not, been officially announced in Canada. The representatives of several dozen other countries received this good news many months ago. Only Canadians have not been told. Is it not time to let them in on the secret?

The problem appears to be that no one knows for sure who is responsible for making the announcement in Canada: the federal government, or the provinces through the CMEC, or both? The federal government funds the Canadian Commonwealth Scholarships. The decision to enlarge the number of scholarships was a federal one and the costs will be paid entirely from the federal purse. However, because of constitutional sensitivities and uncertainties, there has been no press release or public announcement in Canada of the Canadian decision. The announcement at the Cyprus conference was, in fact, made by the Minister of Education of Nova Scotia in his capacity as chairman of the CMEC, even though both the decision and the financing are entirely federal. Is it any wonder that those with whom we deal in other countries on academic matters find it difficult to know where to begin and how to proceed when there are educational questions they wish to pursue involving Canada?

A frequent problem for educators, researchers, and public officials in other countries is obtaining answers to requests for information about educational matters in Canada. Indeed, to whom should such inquiries be addressed? In one recent instance, when the Education Division of the Commonwealth Secretariat was assembling some data for the Secretary General and Heads of Government about international student mobility amongst the countries of the Commonwealth, it requested data from Canada as it did from the other member countries. It wanted to know how many Commonwealth students were in Canada, and where they were from. The request, since it came from outside the country, was directed as a matter of courtesy to our Department of External Affairs. After some time, External Affairs replied that it must refer the request to the CMEC since it dealt with education. The CMEC in due course – a very long due course – let it be known that it was referring the request to each of the ten provinces and two territories, since it did not itself have the data. Nothing further was ever heard from any of them. Ours was the only major country in the Commonwealth that did not reply. Yet many of the other countries have problems of federalism and cultural diversity and size that are as complex, or more so, than our own. Ironically, much of the information that was wanted was readily available from Statistics Canada, if only one or another of the fourteen arms of government that became involved (External Affairs, the CMEC, and twelve provincial and territorial departments of education) had thought to direct the inquiries there.

To help resolve questions involving Canada's international academic relations, there is, apparently, a Federal-Provincial Working Group on Education-Related International Activities (CMEC 1984, p. 30). However, this Working Group, set up in 1981, has only met three times in four years, the last time being in April 1983. All told, it is perhaps better to call it a Group, rather than a Working Group.

Thus, in international academic relations as well as in many academic matters within Canada, there is a need for some national approach and for some national arrangements for higher education and research.

THE EMERGING CONSENSUS

The case for a national strategy for postsecondary education has been strongly argued now by a broad array of educational organizations including, for example, the Association of Universities and Colleges of Canada (AUCC), the Association of Canadian Community Colleges (ACCC), the Canadian Association of University Teachers (CAUT), the Canadian Education Association (CEA), the Canadian Teachers' Federation (CTF), and the Council of Ontario Universities (COU). While the nature of the specific proposals for a national strategy may differ somewhat from one advocate to the next, the consensus around the central notion is clear. The ACCC, for example, declares that 'Today's needs cry out for a national strategy for the Canadian education system', and expresses the hope that the various governments will stop fighting each other long enough to develop 'core curricula based on nationally accepted competency levels across Canada' (ACCC 1983). The CTF calls for the creation of an all-governments Canadian Council of Education and the establishment of a Canadian Office of Education. The CAUT recommends a Canada Postsecondary Financing Act, the formation of a Tripartite Advisory Committee on Postsecondary Education, and the establishment of a Parliamentary Standing Committee on Science, Research, and the Funding of Postsecondary Education. The COU proposes a Canadian Advisory Council for Higher Education and Research. These organizations, and many other spokesmen for the educational community, share both a common concern about the present situation and a common sense of the desirable direction for the future.

Consensus does not come readily to the academic community, still less when it is as badly fragmented as it is in Canada. But most of the Canadian postsecondary community would agree that the best interests of Canadians in higher education and research are being ill-served by the lack of harmony and co-operation amongst those responsible for planning and public policy at the political level, and by the lack of regular consultation between governments and the individuals and institutions that are actively engaged in education and research.

THE FUNDING OF RESEARCH

There is a particularly strong case for a national approach to the funding of research. Most of the direct funding for research now comes from agencies external to the provinces, chiefly the granting councils and departments and agencies of the federal government. Yet universities must find the money to cover the indirect costs of research activities from funds that come primarily from, or through, the provincial governments. Such indirect costs may run to 50 per cent or more of the direct costs that are covered by an external grant (Johnson 1985b). There is an urgent need for a greater harmonization of federal and provincial policies in this vital area, within the framework of a national strategy.

AREAS REQUIRING A BROADER CO-OPERATION

But it is not only in the area of research that a national strategy would benefit higher education. Many academic or academic-related fields require a broader and more effective co-operation between the federal and provincial governments and the educational community. These include the entire enterprise of planning and preparing for an adequate supply of highly qualified personnel; much of the area of R&D; many issues concerning employment and immigration; statistical information and the development of the database essential to informed planning in the whole field of higher education; science and science policy; strategic studies; the educational needs of the north and of the Native peoples; distance education; adult education; environmental studies; international affairs and international academic relations; bilingualism and multiculturalism; scholarly communication in all its forms; the interprovincial mobility of students, faculty, information, and ideas; all the areas of shared federal-provincial jurisdiction, from human rights to agriculture; and the many areas of activity that are interprovincial and supra-provincial.

Although Canadian studies have been dismissed as a 'useless study' by the authors of a recent book (Bercuson 1984), I continue to think that teaching and research about Canada and the Canadian experience is of inestimable value both to Canadians and to many others. By Canadian studies I do not mean simply formally-designated Canadian studies programs, still less set-piece courses with Canadian flags on them, but the giving of appropriate attention to the Canadian aspects of every area of study where such aspects may exist. For this, something more than a provincial approach is required. Canada is more than the sum of its parts.

A NATIONAL STRATEGY SUITABLE TO THE CANADIAN CONFEDERATION

Given goodwill and a spirit of co-operation amongst political and educational leaders, it should not be impossible to work out arrangements for a national strategy for higher education and research suitable to the particular needs and circumstances of the Canadian confederation. Just as a national strategy should not be determined unilaterally by the federal government, so also it need not be centralist. Rather, it should make possible a better and more sensitive centralization in some situations and a better and more effective decentralization in others.

If we are serious about the wish to develop a national strategy for higher education and research, there are a number of useful models to assist us. The work of the joint planning committee of the federal and *Länder* governments in West Germany provides one model of federal-provincial co-operation in planning for and serving higher education in the national interest in a federal country. The series of investigations undertaken by the International Council on the Future of the University (ICFU, based in New York) into the condition of higher education in Western societies, including the recent report by the Italian Universities Commission of the ICFU, also offers much information, a body of experience, and some useful conceptual thinking on which to draw. The recent recommendations of the University Grants Committee (UGC) of the United Kingdom for *A Strategy for Higher Education into the 1990s* underline the importance of developing such strategy (UGC 1984).

CONCLUSION AND RECOMMENDATIONS

Some of the possible elements for a national strategy for higher education and research are examined in *Some Questions of Balance*, the third volume of the Report of the Commission on Canadian Studies (Symons and Page 1984). These include:

- The development of a wider public understanding of the vital role played in society by higher education and research and of the fundamental importance of highly qualified personnel to the well-being and progress of every aspect of our national life.

- A fuller participation by Canadians in the opportunities for post-secondary education, in particular by opening up the opportunities for higher education to a much greater extent than is now the case to the many groups in society that are underrepresented in the universities and colleges of Canada.

- A genuine national effort to remove the social and psychological barriers, as well as the economic barriers, to higher education.

- Replacement of the present patchwork of student aid plans by a comprehensive, nationwide student assistance program to make it possible for all those having the requisite ability to pursue their studies in higher education.

- A nationwide support system for postgraduate education that can meet the future requirements of an increasingly complex society.

- New initiatives and a review of existing programs for the support of research.

- The development of an appropriate and balanced foreign students policy.

- The establishment of a Consultative Committee or Council on Postsecondary Education and Research to provide a continuing forum for representatives of the federal and provincial governments and of the postsecondary institutions to meet at regular intervals to discuss the problems and to explore the possibilities of plans and programs that can meet the growing needs of Canadians in the fields of higher education and research.

To be able to do its job, the consultative committee or council on postsecondary education and research will need the benefit of a systematic provision of more current and comprehensive statistical information about Canadian postsecondary education and about current and future requirements for highly qualified personnel, and arrangements for the advice and support needed to bring this about. It would also benefit from more attention to higher education itself as a subject for study in Canada, and arrangements for ongoing and systematic research and analysis about the problems, prospects, and experience of Canadian higher education.

To achieve such a national strategy, substantial changes will be necessary at both the federal and provincial levels of government and within the academic community. It would be timely for the federal government to make a fresh start in its relationships with the provinces and with the educational and research communities and to work more co-operatively with them in the construction of a national approach to higher education and research. The CMEC cannot continue to be a feckless organization, playing a largely dog-in-themanger role, unable to do itself what needs to be done for higher education and research, yet preventing others from doing it. The provinces must give to the CMEC the resources it needs to do its job properly, and allow it to develop the capacities it needs to work effectively with the federal government and the educational community in appropriate national arrangements. The academic and research community needs to broaden its view from the provincial horizons, to which it has come dangerously close to becoming accustomed in recent years, to develop the skills required to work effectively with government in all its forms, to communicate with the public more regularly and successfully, and to work together within itself in order to create stronger arrangements for co-operative action.

To be successful, a national strategy for higher education and research will require a concerted effort by all the constituent elements – provincial, federal, and academic – that should participate in its formulation. There is an inescapable and profoundly important national dimension to higher education and research in Canada that has been much neglected in the jostling and rhetoric of federal-provincial relations. It should now be addressed in truly national terms, and with the support of resources, both human and material, organized in a co-operative effort on a national scale. The government and universities of Ontario could make a significant contribution to the mobilization of such an effort.

There is much to be done, and it cannot all be achieved quickly or at the same time. The important thing now is to recognize the need and to make a beginning.

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PART IV: FUNDING

The corporate relationship: funding and collaboration

Judith Maxwell

I'd like to report to you here on some research that I did for the Corporate Higher Education Forum (CHEF), an organization consisting of senior business executives and university presidents that was set up about two years ago with the idea of promoting a stronger dialogue between the corporate and academic communities. That research was published in May by the CHEF under the title *Partnership for Growth* (Maxwell and Currie 1984). This talk includes a follow-up on that research plus background research on the question of donations done for this session by Jack Levenstein of the Ontario Economic Council.

The outline of what I want to cover is as follows:

- the traditional relationship between the corporate and academic communities
- their new collaborative relationship
- research results concerning the new relationship, describing its impact and what the key success factors are
- gaps and problems in the new relationship.

THE TRADITIONAL RELATIONSHIP

The traditional relationship between the corporation and the university is one that is based on what I would call unconditional donations. These donations are given to the university primarily out of a sense of social responsibility and on the basis of old school ties. They are not really based on the self-interest of the corporation. Very little in-

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tellectual exchange is involved. Chief executives might very well be represented on the board of governors of a university, but contact between them (or their colleagues) and faculty (or students) would be very limited indeed.

Table 1 presents some data on nongovernment cash gifts to universities. An informal estimate is that grants that support particular lines of research activity account for about half of the gifts. So when we are looking at the $306 million figure of total gifts to Canadian universities, we should really think in terms of only $150 million being true gifts without strings attached. I do not mean to in any way diminish the value of the nongovernment grants. At $150 million, they are still an important contribution, primarily to sponsored research.

Jack Levenstein has made a few phone calls to fundraising officers in universities to try to find out what percentage of these true gifts come from the corporate sector as opposed to individuals and foundations. In one university, it was about 18 per cent, and in another it was around 40 per cent, so we are talking about anywhere from $25 to $60 million in corporate donations. This means that such corporate gifts to universities amount to more than one-half of one per cent of the total university revenue of $5.6 billion but less than 1.1 per cent. Let's round it off at about 1 per cent. I am not happy with the lack of precision in the numbers but it seems to be the best that we can do at this stage.

As a counterpoint to that information, Table 2 shows survey data from the Institute for Donations and Public Affairs Research (IDPAR) based in Montreal, an organisation which makes a survey of large corporations in Canada every year. Their 1983 survey involved 303 companies. You can see that gifts surveyed total $20 million. A very high proportion comes from the industrial sector, and most of those gifts are for capital funding and a fuzzy area called 'Other'.

The large companies in Canada, then, at least the ones we have pinned down, are giving about $20 million to higher education. One can see again that while donations are certainly welcome and important in certain aspects of university financial planning, they are a drop in the bucket in relation to the total university funding needs (see Bird and Bucovetsky 1984).

Table 3 provides some data on universities in the United States. Here we find a somewhat stronger contribution level in the sense that

TABLE 1

Nongovernment cash gifts[a] to Canadian universities, 1982/3

Type of fund receiving gift	($ million)	Percentage distribution	Gifts as a percentage of total revenue for each fund
General operating revenue	27.8	9.1	0.7
Sponsored research	115.4	37.7	17.1
Trusts and endowments	112.8	36.8	48.2
Capital revenue	49.5	16.2	14.8
Ancillary revenue	0.6	0.2	0.1
Total revenue from gifts	306.1	100.0	5.5
Total university revenue	5,575.8		

a Bequests, donations, and nongovernment grants by business, foundations, individuals, etc. Nongovernment grants are estimated to be up to 50 per cent of total gifts.
SOURCE: Statistics Canada (1984)

TABLE 2

Corporate giving for higher education in Canada by sector, 1983 ($millions)

Type of gift	Industrial	Financial	Service	Total
Scholarships	2,790	82	3	2,875
Fellowships	922	44	1	967
Research grants (not expensed)	1,534	72	1	1,607
Capital funds	4,558	2,892	10	7,460
Direct grants	1,261	149	–	1,410
Education-related agencies	1,062	223	–	1,285
Other	4,596	192	6	4,794
Total	16,723	3,652	22	20,397

SOURCE: IDPAR (1984).

donations from the private sector comprise almost 7 per cent of total current revenue in the U.S. university system compared to about 1 per cent in Canada. You can see that it is the alumni and other individuals who make the strongest contribution, giving more than half of the total amount.

Today there is a great debate in the literature about whether or not the tax system is a determinant of the level of giving. Sam Martin,

TABLE 3
Donations to U.S. universities, 1981/2

Source	$ million (U.S.)	Percentage distribution	Percentage of total revenue
Corporate[a]	976	20.1	1.4
Alumni	1,240	25.5	1.7
Non-alumni individuals	1,096	22.6	1.5
Foundations	1,003	20.6	1.4
Religious and other	544	11.2	0.8
Total	4,860	100.0	6.8
Total current-fund revenue of public and private universities	72,191		

[a] Includes corporate foundations.
SOURCE: Council for Financial Aid to Education (various years).

one of our discussants, has done some work in that area and he will be able to shed more light on the issue than I can. Although tax deductions of course make giving cheaper for the donor, most studies show that the level of giving is not directly responsive to the tax system. When asked their reasons for giving, most donors are likely to cite issues such as the social responsibility of the corporation, or certain public-relations objectives.

Incentives for donations are quite similar in the Canadian and U.S. tax systems. The specific terms in each country differ quite considerably between individuals and the terms for corporations are also different. Some of the U.S. rules are certainly more generous when it comes to gifts of real property or other equity portfolios, but I don't think that these differences in tax systems can explain the differences in Canada and the U.S. in the level of giving from the private sector. Either the differences are based on different cultures in the two countries, or, if you want, less effort on the part of Canadian universities to go out and attract that kind of funding (see Bird and Bucovetsky 1984).

If we use the U.S. level of contributions as a guide, one gets the impression that Canadian universities have some potential to raise more money from the private sector. But we are talking about marginal increments in total funding, since total corporate giving is 1 per cent of total revenue; even if we double private-sector funding, we still have not done much to solve the funding problem.

THE NEW RELATIONSHIP

The new relationship is collaborative in nature, and new in many respects. In the survey work that we did for the CHEF, we found a great many types of collaboration that had developed since the late 1970s, when a surge of collaborative activity began.

This new relationship is very much based on intellectual exchange. It also tends to be motivated by self-interest – both the corporation's and the university's. I won't be able to give you any sense of the dollar value of this kind of activity, but I can give you a sense of how widely dispersed and rich the activity is and also, I hope, of what its potential is.

Table 4 describes the various kinds of co-operative ventures. The first four are joint ventures, interface institutes, research contracts, and research parks. These are the ones that involve the most intimate type of co-operation between academic and corporate institutions. Their main purpose is to solve problems by either creating knowledge or diffusing new knowledge, passing it along to people who otherwise would not have access to it. The spin-off or benefit from this type of activity is that you get an expanded research capability.

We spent some time on a survey of joint ventures. A survey questionnaire was sent out to 56 universities in Canada. Of the 37 joint ventures identified, half of them are in Quebec, primarily at UQUAM, Laval, and the Ecole Polytechnique. The others are spread quite widely around the country, all the way from Newfoundland to British Columbia. The definition of a joint venture that we used for purposes of this survey was 'a detailed contractual agreement . . . involving joint planning, management and implementation of a significant, long-term program of mutual interest and benefit.' (Maxwell and Currie 1984, p. 37) A high proportion of these agreements were in the area of research but not the majority by any means. Many were oriented towards either improving the quality of education or providing a particular service to the community.

The same questionnaire also identified 21 nongovernment-sponsored interface institutes. These are centres of specialization with corporate affiliates or direct corporate involvement for the promotion of a particular research or education objective. There tend to be a

TABLE 4
Collaboration between corporate and academic institutes in Canada by type of project

	Purpose	Benefits
Joint ventures	Solving problems, creating and diffusing new knowledge	Expanding research capability
Interface institutes		
Research contracts		
Research parks		
University-based companies	Exploiting new knowledge	Commercializing university research
Co-operative education	Upgrading professional skills	Building personal linkages between faculty and corporate officers
Continuing education		
Manpower-transfer programs		

SOURCE: Based on Maxwell and Currie (1984). See Appendix 2 for the list of persons interviewed.

number of different corporations involved rather than one single firm. The institutes are almost invariably located on the university campus. The 21 that I am speaking of here were set up spontaneously by the corporations and the universities themselves. Another 42 interface institutes exist that were founded as a result of seed money being offered by the federal government to promote technology transfer, greater specialization, and R&D generally.[1] (ibid., pp. 27-8 and Appendix 4) These interface institutions are scattered all over the country. Some of them focus on long-term research, whereas others have a much more applied-research or technology-transfer orientation.

A collaborative relationship is also fostered through research contracts whereby a faculty member or faculty group take on a commitment to conduct a specific line of research with a specific deadline on behalf of a corporation. The only numbers that we were able to find were estimates provided by the University of Waterloo's Office of Industrial Research, indicating that in 1981, $12 to $15 million in contract research was underway at 13 major Canadian universities.

Another type of co-operation involves university-based companies. These companies generally are formed to exploit technical breakthroughs that have been made at the university. The university proper detaches itself from the commercial exploitation of such breakthroughs as it is not a profit-oriented organization, and the management of the company detaches itself from the university, probably in order to have wider managerial flexibility to promote the product or service in the marketplace. However, we found in the case studies (Maxwell and Currie 1984, pp. 55-6) that important exchanges were nevertheless often conducted between the managers of these university-based companies and the campus itself.

The remaining types of collaboration are much more low-key, and much more dispersed. They are co-operative education, continuing education, and manpower-transfer programs. At this conference, Brian Segal gave a vivid description of the sort of manpower-transfer exchanges that can successfully go on between the campus and the corporation. Such exchanges inevitably enhance the quality of education and the skills of both the academics and the corporate people who are participating. Another important aspect of the exchanges is that they build personal links and hence a climate of trust between two institutions who have probably had little contact previously.

Why has collaboration increased?

Why have these new relationships blossomed in the 1980s? First, global competition has forced the corporate community to hunt for new technologies, high quality graduates, and help in, for example, upgrading employee skills. Second, if you look at what the sources of economic growth are likely to be in this country over the next couple of decades, it's clear that we have to stop focusing simply on quantity, in terms of adding more manpower, more capital, etc., and turn our attention more to quality, in terms of upgrading technology and the human resources of today's workplace. These are the facts of life that have hit home nationally and encouraged a wave of federal programs, more co-operation between the university and corporations, and much higher emphasis on the acquisition and effective implementation of technology.

On the university side, a third factor is the need for a funding, both for expansion and upgrading, and for what I call 'market knowledge', an awareness of what is going on in leading-edge industries. A sound 'market knowledge' ensures that universities set their research priorities and plan their curricula efficiently.

A fourth factor pulling the two institutions together concerns the impact of technology itself. A number of issues here are relevant:

– In many areas of research, there is only a short lag between the time of an innovation and the time that it takes to become a commercially viable product in the marketplace. Companies that are very aggressive in seeking out new product lines and services thus want to be as close to the laboratory bench as possible in order to be the first to bid when the proprietary rights become available.

– There is an increasing need to combine disciplines, to bring together electrical engineers with mathematicians, for example, and any number of other skills in order to advance knowledge in key areas.

– Regarding the higher cost of equipment, if you are going to have to lay out millions of dollars for a particular piece of equipment that is needed for teaching or for research on campus, it makes a lot of sense for corporations with similar interests to be able to contribute to the purchase of that equipment and also to have access to the use of it.

– There is a shortage of specially trained talent. The universities have trouble in hiring, for example, specialists in computers because they can't afford to pay the going market rate for them. One option for the universities and corporations is to jointly appoint such specialists.

A fifth factor that builds co-operative efforts is that some universities with international reputations appear to have corporations knocking down their doors in eagerness to participate in getting a particular piece of research done or with a desire to contribute to the teaching of a certain subject.

KEYS TO SUCCESS

How do those universities who don't have that international reputation set about linking up with the corporate sector? The best route seems to be to begin by initiating manpower-exchange programs or even research contracts. In the process of conducting research for a contract, the university enables faculty members and middle-managers to work side by side. Through the process of sharing resources and supervising the work, they will get to know each other and begin to break down some of the cultural barriers between the two institutions. They may then identify more ways in which they can link up. If the research contract is successful and more research needs to be done, this may be the time to form a joint venture, or perhaps an interface institute so that other corporations can become involved in the program. I am saying here that the different kinds of linkages tend to merge into one overall interface once the atmosphere of trust has begun to build.

In trying to define for CHEF the keys to success in these sorts of ventures, we came up with two basic criteria: one was 'understanding' and the other was a well-defined agreement.

'Understanding' seemed to be the best word to describe what was at the bottom of the patterns of activity that lead to the most productive relationships. In the first instance, you need commitments by the chief executives of the university and of the corporation. Once they are committed, they are then in a position to build a climate of openness throughout their organizations. We also found that to foster understanding, decentralization is important. It is all very well for the two chief executives to speak to each other, but neither one of them will know about the specifics of the research or professional educational requirements of the two organizations. It has to be people way down the line who will define such opportunities and pursue them. Another important element fostering understanding is to have freedom to travel between the campus and the corporation. This is where manpower-transfer programs or co-operative education have really contributed to healthy exchanges.

The second criterion for success, a well-defined agreement, is one which should be examined at the point where an opportunity has arisen and both sides are ready to commit resources. At that point the literature shows – and our interviews showed – that both parties have to invest time in defining who will commit what, who will do what, and who will pay for what. It often takes months to negotiate these contracts. One of the main issues concerns proprietary rights to any research results. In general, the university tends to retain rights to the royalties and so on, but there may be clauses that give the corporation a bit of lead time against other people in the marketplace, perhaps entailing delays of three to six months in publication rights, for example.

While nearly everyone interviewed said that the part of the contract or the agreement focusing on proprietary rights was very difficult to negotiate, everyone had been able to live up to the contract once the program began. This indicates a quite different environment in Canada than the one described in the American literature, where there have been some very serious disputes and even litigation with respect to rights to research results.

One other comment that I might make in terms of describing co-operation arises from a survey we did of the international literature. This survey relied heavily on a group of studies that had been done by the Organisation for Economic Co-operation and Development (OECD 1982, 1983). These studies showed Canada to be well ahead of Europe and Japan in terms of developing interfaces between the corporate and academic worlds, and only slightly behind the U.S. activity that is going on. In fact, in Europe there is a great deal of interest in some of the projects here in Canada, and we are being used there as a kind of benchmark for the development of similar activities. One project that is frequently referred to is Memorial University's Centre for Cold Ocean Research (C-CORE), where some foundations and numerous companies in the oil industry have pooled resources with the university in quite a variety of disciplines.

GAPS IN THE RELATIONSHIP

Turning now to gaps in the relationship, the two aspects that I'll talk briefly about involve a bias towards high tech and barriers to co-operation.

The heavy focus on high tech is there because this is what Canadian companies need if they are going to survive and compete effectively in the future economic environment.

The result of the bias towards high tech is that arts faculties have few opportunities for co-operation. This raises a problem for the university as an institution. Accepting the fact that there is something to be gained from ongoing corporate relationships, there's a potential imbalance present here affecting the way budgets are allocated. I don't have a solution to the problem, but it seems to me that you can see the relationship with corporations as an opportunity to assemble a critical mass of resources in key areas that will be oriented to R&D and management sciences while at the same time encouraging other funding in order to maintain the balance within the university of the overall range of disciplines to which society as a whole needs access.

Regarding the barriers to co-operation, we also found in our interviews a – to be polite – paradox within the corporate environment. A chief executive will tell you that the graduate he really wants is a good, strong liberal-arts graduate who is fluent in computers and a good communicator. But when you look at who he is recruiting, you see he appears to be looking for someone with very specialized training who will fit neatly into a square hole that has already been defined. Now that this has been identified as a problem, I think the CHEF would like to pursue it as an area of further research.

We could talk about many other barriers to co-operation, but what I want to do here is to give only a very brief summary of some of them.

The cultural differences making it difficult for the two institutions to interact revolve around values, expectations, and modes of operation. For values, the best example I can think of concerns the difference in promotion criteria between the university system and the corporate system. In universities, promotion is based on publications and on teaching performance. If faculty members engage in co-operative activities with industry, they find that they have less time to devote to writing and teaching. Since consulting work is not usually valued as highly as the above two activities, some faculty members may suffer for it.

Regarding expectations, the university community is founded on the principle of freedom of information, whereas on the corporate side the whole focus is on closely-guarding information that can provide an advantage in the marketplace. We have quite clear evidence that the agreements that are signed can in fact get around that problem, but it takes a great deal of negotiating effort sometimes to do it.

Varying modes of operation can result in another cultural barrier. The university research atmosphere is one that is founded on open-ended grants for basic research. In contrast, the corporate atmosphere usually entails a given budget to perform a particular task. Suddenly the academic is faced with the discipline of meeting a budget and showing results by a certain time.

Another barrier to co-operation is what I call the lack of focus. I think that this shows up on both the university's and the corporation's side. Unless it has an international reputation, the university has to create a door to knock on before convincing the corporations that it has expertise that will benefit them. On the corporate side there is a problem of awareness. Canadian companies have been very slow to realize the competitive problems that they face in the 1980s and a lot of them are way behind in terms of figuring out how to gain access to technology. They still have to learn to go to the universities, where there is a resource – perhaps right in their own community – that can help them.

Finally, co-operative ventures require individuals who are able to bridge the cultural barrier and who can work comfortably in an academic setting and still conform to some of the standards set by the corporations.

Despite the barriers noted above, there is no question of the increasing commitment of Canadian business to Canada's R&D effort. Table 5 shows Statistics Canada data on R&D effort in the natural sciences and engineering. Note the very important increase that has taken place in the corporate sector's commitment to conducting R&D. In the mid-1960s they were responsible for about 40 per cent of the R&D activity going on in Canada. They are now responsible for 50 per cent. That represents a very large jump. They have also substantially increased their funding of R&D. In other words, not only are they doing more in-house, they are also putting more of their own dollars into that R&D. It is not all due to controversial tax incentives or hand-outs from the government. Rather, it shows a commitment of dollars which has been sustained, with only a slight decline through the recent recession.

THE SIGNIFICANCE FOR CANADA

It seems to me that from a national point of view, what we have been talking about is how to mobilize Canada's intellectual resources in a more efficient way. Co-operative activity enables us to share resources, to build up areas of specialization and to generate an economy of effort in research and education. It also enables us to acquire a market-oriented focus for basic research in the university. In addition, it encourages a small but significant additional source of university funding. Further, it provides new impetus from the corporate community which creates pressure on the universities to improve their standards of education and research.

I have one concluding comment. Unconditional donations are important, but they are very limited in terms of how they contribute to

TABLE 5
Contributions to Canada's R&D effort in the natural sciences and engineering

	1963-7 (% average)	1978-82 (% average)	1984[a]
Performers of R&D			
Federal	34.2	23.7	25.1
Business	40.9	49.2	50.0
Higher education	20.8	22.7	20.0
Funders of R&D			
Federal	47.3	36.1	38.1
Business	31.9	41.1	40.1
Higher education	12.2	10.6	8.8

a 1984 data are preliminary.
SOURCE: Statistics Canada (1983). Preliminary 1984 data provided by telephone.

the universities. The new collaborative relationship is also small in terms of dollars, but it also has major spinoffs, such as helping to redirect resources and to create a critical mass of manpower and equipment in areas where we can build expertise for the future.

As a final comment I think we have to stress that cultural barriers to collaboration are still substantial. It will only be through a change in mentality in both communities that we will see a continuation of the rate of growth in corporate-academic collaboration.

NOTE

1 The questionnaire did not request information on the government-sponsored institutes.

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Comments

Lorie Tarshis

It is obvious that the main speaker of this session has raised some very important issues for universities, though up to now corporations have never and are not yet providing any significant share of the funds needed by universities for their various operations. If the provincial and federal governments continue for another decade to fund colleges and universities in as miserly a fashion as has been the fashion since the beginning of the New Fiscal Enlightenment about fifteen years ago, the relationship between the university and the business corporation will either have to grow in scale or we will have to depend more and more upon the universities south of the border as our own institutions decline. Surely the latter scenario can be seen to be virtual submission to the least beneficial aspects of a colonial status. Since in recent years government has given no signal that it is at all concerned about this, the other option that universities must be prepared to consider, save for abandoning some of their most important functions, is a strengthened relationship with the business sector.

Such a relationship must have two dimensions. First, it will have to provide for a large enough flow of benefits to both sides, to encourage them to maintain and expand their relationship. Too little of a flow, and our universities will wither and their fruit – which I believe society needs and does appreciate – will become scanty and bitter. Second, the quality of the relationship is also at issue. Ideally, the relationship should encourage the university to foster activities that it can perform better than any other institution. Its role in teaching

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(young and not-so-young adults) and research, particularly in those areas that are not directly relevant to the short-run profit-seeking activities of the private sector, must not be abandoned: on the contrary, that role must be supported and strengthened. Universities must be encouraged to try even harder, and where they don't or can't, they should be helped to die with as much dignity as possible.

I don't believe for a second that our universities are at death's door yet, though government by its actions – if funding inadequately can be called an action – has signalled its belief that *bargain-hunting* for top-quality teaching and research is all that this country can afford. But surely such a belief does not suit a country whose resources of people, nature's bounty, and social and political institutions are relatively so generous.

I only wish that I could feel so confident about the quality of our political leadership – and believe me, I am just as critical of any one party as I am of another. In such a mood, I recognize our speaker's eagerness to persuade us that the corporate sector might well provide the saving grace.

I agree with her, and acknowledge the evidence provided by her examples that the corporations and the university can sometimes be teamed so that each party derives benefit from the symbiosis. The examples to be found in the United States show that it seems to have gone a good deal further down this road than we have; further, they even suggest that, although very much remains to be done here, if universities and business corporations can be instructed on procedures, at least some of the gap left by underfunding of universities by government can be filled.

We are bound, then, to accept her general conclusion: that because a bond between the university and the private-sector firm can provide significant benefits to both sides, greater efforts should be made to encourage this arrangement. It *could* be the means by which universities could be helped to flourish. While it takes more optimism than I can summon up at present to hope that such arrangements can make up for government underfunding, the dangers that universities now face are great enough to add force to her conclusions.

What, however, I feel I must do here is underline the dangers that such arrangements can create. More is better, I agree, but better is even more. I mean by this cryptic message that while universities and business firms should be encouraged to enter into more of these arrangements, and where possible bigger ones, universities, which alone can be counted on to give priority to their proper role, must press as hard as they can for arrangements that recognize that optimal role instead of endangering it.

Let's begin with some general principles. The university has by now an almost desperate need for money. It has a faculty to keep and improve; it has students who if they show promise must receive some financial help (to such students, the cost of continuing for the one, two, or three more years to graduation has to include the earnings they are not in a position to secure if they remain as students); and it has such capital assets as lecture halls, labs, equipment, libraries and their collections, and research facilities that must at least be maintained and if possible improved over time. As one who has spent more than 55 years in and around universities, I firmly believe that while the care and maintenance of faculty, students, and physical facilities may be marginally better now than in, say, 1928, the rate of decline in these standards over the last ten years seems never to have been so drastic.

When one remembers how difficult (and costly!) was the task of building up these institutions, it is plain that their deterioration is almost insanely wasteful. Universities, aware of their needs and responsibilities, must do everything possible to secure help in arresting the rot.

The business corporation, in its turn, has needs too. If it is to survive it will have to stand up to the strong competition of other firms, not only in Canada but also in the United States, Britain, West Germany, Japan and in a host of 'mini-Japans' – all of them making full use of the training, the technological advances, and the developments of new products that the academic and research facilities in their countries have yielded. For the most part, their universities are the most important of such facilities. But they have been favoured, while ours have been allowed – or more accurately, pushed – to decline.

Parenthetically, I must point out that in 1970 it seemed likely that our universities were going to be able to leapfrog ahead of those in the United States. The New Fiscal Enlightenment first took root in the United States, and the federal and an increasing number of state governments accordingly took steps to slash academic budgets. The publicly-funded universities such as the University of California at

Berkeley, which has to be ranked as amongst the world's greatest, very quickly entered into a frightening period of decline – as could have been foretold; but fiscal enlightenment gave way rather quickly to human enlightenment – human enlightenment bearing the same relation to fiscal enlightenment as human intelligence bears to military intelligence – and increased support for universities, both public and private, became available before too much harm had been done. It is ironic that Canada, which held out against the U.S. descent into academic oblivion for a few years, has more recently managed to hold out against the United States in its ascent to a blessed state for very much longer. At this stage it appears that Canada's need to strengthen the university/business-sector bond has become even more urgent.

Now with the universities almost desperately in need of such outside assistance as the business sector can provide, and business firms able to put to good use any access to the oases of expertise – in the physical sciences, clearly, but probably also in such areas as statistics, computer sciences, mathematics, managerial sciences, and many parts of economics, etc. – that the universities possess, it is easy to imagine that deals can be struck. After all, that is the nature of a deal – that each side believes that the transaction will confer gains on both sides.

But there are deals and there are deals. Those between two parties that are distinctly unequal in strength very likely favour the stronger. 'Naturally,' you would say, 'where's the harm? Won't they both gain since the weaker presumably knew what he was signing?' But to believe that is to close your eyes to reality. The university does not have the ready resources of the corporation. It cannot close its doors when times are bad and start up again when conditions improve. It has bills to pay – its contracts to tenured faculty, its recognition that some of its untenured faculty are potential prizewinners too and that, if it is to remain viable, it cannot let them go and then hire a new batch six months later. Its needs are likely to be extraordinarily pressing. And again, the university alone will have a keen interest in maintaining the general balance of its varied activities; for example, in trying to keep the fine-arts department at an appropriate size relative to other departments. Put simply, the university is no match for the corporation and the corporation knows it. The large firm can use its superior strength in bargaining with the university, not only to secure a contract that is relatively favourable to it, but also to press the university to strengthen areas in which it – the firm – is interested, without regard to the university's vision for itself.

I would not claim that any corporation has done any of these things, but I have heard too often of contracts for research that have allowed far too little for overhead to feel confident that such things cannot happen. And remember, the university should get enough extra for a project that just makes use of, say, its chemical engineers or economists, to enable it to finance expansion in *unrelated* areas; after all, the contract was with the university and all its facilities, and it was the university that built the labs, hired the faculty, and created a functioning unit. And I have also known of rich private donors who quite brazenly laid down conditions for a large grant – for example, that Professor X, a notorious liberal, should be sent into exile, or that the applied sciences must be given better facilities or additional faculty. A donor ought not to suppose that his gift is the purchase-price of the university or a part of it; and a corporation that has agreed to buy a specified set of services from a university ought to realize that it has no legitimate claim against the university except for those services. Its position vis-à-vis the university enables it to act in ways that may well weaken the university – by moulding it to a shape that suits the corporation's short-run interests – but if it does so, it may find that, taking the longer view, it has also hurt itself.

A second-best solution

If such pressures are to be turned aside, the contract – the *ideal* contract – would have to recognize that no matter which department the corporation is working with directly, it is in fact buying the services of the university at large. If this is understood, it follows that the allowance made for overheads should be high enough to enable the institution to redress any imbalance that may be generated by a call to provide more services.

In this connection, I believe that the usual rate of 30 per cent for overheads is ludicrously low; and that the government, whose lead in such arrangements is often followed, has been very short-sighted.

Can anything stronger be urged from an outsider than caution and consideration to safeguard the interests of *both* parties when deals are struck? (I suppose it is unnecessary to labour the point that Sunday sermons will not guarantee the desired response.)

My recommendation is that our universities should follow the advice so freely given by the White House to the south: 'negotiate from strength'. But how can the individual university acquire that strength – or particularly, the strength it would need to deal with a large corporation? Once again, it – or really they – can learn from the conduct of others. It has to develop a code, to which other universities – and especially those that are or may become active in making these arrangements – subscribe. Major universities might, for example, agree amongst themselves on a minimum allowance for overheads – say, 70 per cent. (Even that would be low when compared to typical levels in the United States.)

But codes of this kind are liable to break down. A further extension would be to set up a joint universities' secretariat to supervise contracts. Such a secretariat might go even further by undertaking the onerous job of formulating and negotiating any such contracts. Of course, such an arrangement as this would also break down if some universities chose to opt out.

Some may argue against this scheme on the ground that it fosters monopoly. But such a view is mistaken. It builds a defence *against* monopoly, essentially by creating a countervailing force against monopoly.

When competition almost everywhere is at best imperfect, and often quite lacking, an insistence upon pure, unalloyed competition in a few sectors does *not* guarantee an ideal solution. Instead, it pushes the solution even further from the ideal. Such a secretariat, with teeth, is better than leaving everything to the market. I must insist, however, that if government would recognize its responsibilities to fund higher education at an appropriate level, all these arrangements would have no justification. Until then, they seem to be a very acceptable second-best solution.

Comments

Samuel A. Martin

I'd like to examine from a tax point of view the various ways and degrees that money flows from the corporate sector to the universities. I will also comment on which industries in Canada appear to be the most generous when it comes to making charitable donations.

First of all, Dr. Maxwell suggests that more money is now being spent on joint scientific-research projects. There is not, and never has been, a problem with this type of expenditure concerning tax deductibility, so little time will be spent on a discussion of such projects here.

We saw this morning some numbers showing the money that flows from the corporations to the university system. Money also flows from corporations directly to individual faculty members. The amount of that consulting income varies, of course, across individual faculty members and within different faculties or schools within a university. The amount is not to my knowledge documented anywhere. Hence, the full degree to which corporations make tax-deductible contributions to higher education is probably unknown.

Virtually every dollar that corporations give to universities ends up being tax deductible in one form or another. Scientific-research expenditures are deductible under Section 37 of the Income Tax Act, either as expenses or tax credits. Other payments are deductible as business outlays. Examples of such outlays include fees for executive courses, consulting contracts with individual faculty members, and hiring talent from a law school for labour arbitration.

Donations – the traditional form of support – are not deductible by a corporation as a business expense. They are specifically disallowed as

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such and are added back to corporate income. However, the Income Tax Act does permit the corporation to deduct donations for an amount up to 20 per cent of corporate income. The 20 per cent limit applies to any one year, but there is a five-year carry-forward for donations exceeding the limit.

In terms of the capacity of corporations to donate within the existing tax laws in Canada, there is absolutely no reason, in my opinion, for the Income Tax Act to be changed. Consider that the outflow of charitable donations from the corporate sector has represented only about 0.4 or 0.5 per cent of corporate income in Canada in recent years. Corporations could expand their donations – that is, their no-strings-attached transfers – 50 times before there would be any practical constraints. Given the above, the Income Tax Act cannot be viewed as an impediment. And just as an aside, in the United State, the limit on corporate deductibility is 10 per cent of corporate income. Although this limit is tighter than ours, their corporations donate at the rate of about 1 per cent, so that the average payout from corporations is 1½ times larger than here.

Corporate donations to universities probably amount to 50 or 75 million dollars a year. Large corporations in Canada give about 28 per cent of their total donations budget to the educational sector, and most of that ends up in universities. Small corporations, on the other hand, give about 15 per cent of their donations to education. Total corporate donations range from around 200 to 250 million dollars a year, but that amount may shrink by about 50 to 60 million dollars during recessionary periods. Thus, if a university depends on donation flows from corporations for its general ongoing budget, it must face the possibility that the donation flow to it will decline in periods of recession.

Canada's corporate donors

The generous industries tend to be those that are people-oriented. They have a high ratio of employees to capital, or a low capital-intensity ratio. Knitting mills, for example, are very high on the payout ratio. Clothing manufacturers, textile mills, metal fabricators, leather products, furniture, and beverages – these are also very generous industries.

The ones that give the least are the capital-intensive industries – storage, transportation, metal mining, agriculture, petroleum and coal, chemicals, communications, public utilities, and mineral fields.

Participation rates? Only 9 per cent of corporations in Canada claim donations for tax purposes. That leaves 91 per cent who do not. Of course, many of the 250,000 corporations in Canada are either dormant or are captive and so on. The surprising statistic, however, is that about 25 per cent of corporations earning over 30 million dollars a year in pre-tax income claim nothing as charitable donations for tax purposes.

The giving corporations tend to be those that are less profitable and that pay more tax as a percentage of their income. The less generous corporations, or the ones that don't give anything, tend to be just the opposite. Not only are they very profitable, they pay a lower effective income tax rate than the ones that do contribute.

Corporations controlling 40 per cent of the earnings in Canada give nothing by way of charitable donations.

Corporations, generally speaking, make donations through a donations committee, particularly when it comes to large gifts. The number of decision-makers in corporations today compared to a decade ago is substantially higher. It has been found that as more people become involved in the donation decision, the payout tends to decline. In our survey,[1] for example, in companies that had one person making the donation decision, their payout averaged 1.3 per cent. If there were three people involved it dropped to 0.7 and if there were five or more involved it dropped to 0.5.

NOTE

1 See Samuel A. Martin (1985) *An Essential Grace: Funding Canada's Health Care, Education, Welfare, Religion and Culture* (Toronto: McClelland and Stewart)

Discussion

ARTHUR SMITH (Ontario Economic Council): You made reference to the fact that, concerning the new forms of corporate-university relationships that are still evolving, Europe and Japan seem to be lagging behind Canada, and the U.S. is only slightly ahead of Canada. In my, albeit limited, contact with people in the United States on the frontier of these new relationships, I gained the impression that in fact Canada is lagging quite significantly behind the U.S. Have any studies been done that would help to illuminate how U.S. corporate-university relationships are evolving and developing? A second question: in this new form of relationship, are we perhaps seeing only the beginning of a trend that, while still very limited now, could become very widespread in 10 or 15 years?

JUDITH MAXWELL: In response to your first question, Arthur, there is a very recent and comprehensive study by the National Science Board[1] in the United States that surveys co-operative activity in the United States. Also, there is no question that some forms of co-operation are more fully developed in the United States than they are here. However, if you look at what has been going on in Canada, particularly at Waterloo, we still have many major corporations involved in significant activities and projects here, despite the much smaller size of our corporate and university communities.

With respect to your second question, there are all kinds of reasons why co-operation should be growing at an exponential rate. I expect growth to continue in those universities that are now most open to this kind of activity. What I don't know is whether we'll see some of the more traditional universities in Canada really make a commitment in this direction. As I said to you, there are 37 joint ventures. And 21 of them are in 3 universities in Quebec. That suggests there are a lot of universities in Canada that haven't picked up the ball yet and perhaps, because of their internal culture, will choose not to. Lorie Tarshis has just described, more graphically than I ever could, why the reluctance to make a commitment is there. Now, I think he is very wrong in some of the things that he said, but the view of the world that he articulated is prevalent and it is a very clear obstacle to collaborative relationships. As a result, I dare not make an optimistic forecast for growth in corporate-university relationships.

NOTE

[1] National Science Board (1982) 'University-industry research relationships, myths, realities and potentials' *Fourteenth Annual Report* (October)

Financing techniques, good and bad

Peter M. Leslie

INTRODUCTION

I was asked to discuss government support for the current operations of universities, and specifically to review the advantages and disadvantages of alternative funding mechanisms. I propose to meet the spirit of this assignment, but slightly to reformulate the terms of reference because the phrase 'alternative funding mechanisms' strikes me as inaccurate. Perhaps the difficulty I see is merely semantic, but if I explain why the original formulation isn't, in my view, quite right, I shall thereby clarify my own approach to a complex subject.

A funding mechanism is a device or procedure for channelling money to a beneficiary. An example is government operating grants for universities, or, to suggest finer categories, grants allocated by formula, grants allocated on a discretionary basis, and so forth. Research grants are another funding mechanism, as also are some forms of student aid. (No doubt in some cases student aid is properly classified as a transfer payment to the students themselves, but to the extent that student grants or subsidized loans are merely a pass-through device permitting the universities to levy higher fees, then they could more accurately be described as an indirect subsidy to the institutions in which the students are enrolled.)

Various funding mechanisms are typically used in combination. To think of them as *alternatives* is a mistake: the important thing is to see how various funding mechanisms complement each other. And let's not forget sources of university income deriving from the private

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sector. Ultimately the question that concerns us is how society, not just how government, supports the universities. This scarcely downplays the role of government, since public policy bears directly on the magnitude of fees income, private-sector research grants and contracts, and gifts. What's more, ultimately government ends up paying much of the cost either directly (if not through operating grants then through other funding mechanisms) or through the tax system by way of forgone tax revenues, or tax expenditures. Thus government largely determines not only how much money the universities get, but where they get it from, what strings are attached to it, and what rules (if any) determine its allocation to individual institutions. All these matters have a large impact on the structure of university systems and the quality of the teaching and research done within them. It behooves us therefore to pay careful attention to alternative *financing techniques*, which are packages of various funding mechanisms and tax expenditures.

The reason for focusing on financing techniques rather than individual funding mechanisms is that it's the whole package that counts. One can't rationally modify one particular component of university incomes without making complementary changes in other sources of income. For example, if one redefined the rules for supporting research such that research grants covered faculty time and/or university overheads (which typically, at present, they do not in Canada), it would make sense also to modify the weights in a formula for distributing operating grants. It would be irresponsible to look at only one source of income at a time, and to recommend making changes in it without introducing balancing changes elsewhere.

Before surveying the range of possible financing techniques, it is important to emphasize that there is no one best way of providing for the support of universities. This is a corollary of the fact, amply illustrated by discussion at preceding sessions of this conference, that there is no one best model for university governance, or for the organization of a network, or system, of universities. I do not mean to make the banal observation that every model has its good points and its bad points. While undoubtedly this is true, the matter I wish to emphasize is that the choice among various models for university governance, and among various models for the design of university systems, depends on what one wants for the universities. By extension, the choice among alternative financing techniques ought to depend upon the shape or characteristics one wants to impart to a university system.

The university system: three models

Each speaker at this conference has evidently had a fairly clear idea of what a 'good' university system for Ontario should look like. It will be useful to distinguish three alternative designs either explicitly or implicitly endorsed by the participants.

One model envisioned the continued expansion of Ontario's system of postsecondary education, and specifically of its universities. The expansion would be shaped by student demand. The universities should realize that there exists a still-growing clientele for teaching services, particularly in part-time and graduate studies, and should press government for the funds needed to accommodate the demand. (The assumption was apparently made that government should continue to buoy up demand by maintaining at least the historical level of subsidy.) At the same time, the quality of instruction should be raised. In other words, as I interpret this position, the problems now facing universities and planners of university systems are pretty well of the same character as the problems of the mid-60s, though the rate of expansion required is undoubtedly rather less. In addition, the expansion of the university system will be easier now, because the existing base is broader.

Evidently, some speakers had an exactly opposite model in mind. For them, the policymakers' objective (expressed in Newspeak, as is appropriate for this Orwellian year of 1984), should be 'to downsize the system.' As one person put it, 'We should educate fewer people to a better level'. It was necessary – or so it was argued – to create a planning and administrative authority to devise and implement a policy of triage, protecting and improving what is best in an overbuilt system, and amputating elsewhere.

A third model, essentially one speaker's contribution, combined the first two in an interesting way. I label it 'the stratification solution.' Its advocate was evidently sympathetic to a policy of triage, and also urged that the universities acquire greater financial realism (accepting that governments have only so much money to spend, and may well be willing to give rather less to universities than in the past). Thus he accepted the imposition of external administrative controls on the universities, and saw centralized budget planning as a necessary and even a desirable device to accomplish system rationalization.

On the other hand, he also thought it would be desirable to accommodate a still-large and perhaps a growing student body. This seeming contradiction was resolved through the suggestion that the apparently less gifted students should go to a form of junior college where staff would have twice the teaching responsibilities of university faculty and would not be expected to do research. Students who performed well in the junior colleges could transfer to the universities.

I endorse none of these models. The most one can say for the expansionist one is that it's gutsy. Unfortunately it lacks both political realism and, in my opinion, principled justification. It is difficult to see on what grounds one might defend the use of public resources (and the implied income transfer) for indefinite expansion of the universities. To adjust supply to meet demand is much approved of in a market society such as ours; but to inflate demand by pricing the product well below cost, in the absence of anticipated social benefit, vitiates the market model. This is not to deny the existence of social benefits from higher education. On the contrary, I think they are substantial. Nonetheless it is important to weigh benefits against costs, which I could not detect was being done by the advocates of the expansionist, demand-driven model.

The other two models, though they represent serious attempts to come to grips with the serious problems now facing the universities of Ontario (and by implication elsewhere), are badly flawed. I think they represent a mistaken understanding of the conditions necessary to promote good teaching and research performance. I shall elaborate this point later on. In the meantime, suffice it to say that the impact of the intended salvage operations would be, in my opinion, both wasteful and destructive.

The university system: a fourth model

My dissatisfaction with the three models so far identified leads me to propose a fourth one, a flexibility model. The problem facing universities is to acquire the capacity to grow and shrink at the same time. Some programs, faculties, and universities need to expand, as required by changing demographic patterns, student preferences and social needs, and by the progress of scholarship. There may indeed be growth in the aggregate. But it is quite unrealistic to imagine that growth could be so rapid that, as during the 1960s, even those showing the sharpest relative decline will nonetheless grow absolutely. The point is that even if there is aggregate growth, some units will have to shrink. Indeed, the shrinkage may be great enough that there is an aggregate decline in enrolment across the system. But that again is not the point: there has to be growth and innovation.

In Ontario the university system, while not entirely of recent construction, is largely the product of a very rapid and I would say over-rapid period of expansion which reached its apogee about 15 years ago. The problems it faces today are very largely the legacy of the precipitate growth of the 1960s. Through the 1970s the universities experienced less-than-expected growth and suffered a decline in real (constant-dollar) revenue per student. The shrink-and-grow scenario means that excess capacity will arise in some academic disciplines and degree programs while others are understaffed and are, as well, badly short of space and equipment. Innovations in curriculum will have to be financed by taking dollars from existing programs. The universities will therefore have to make substantial adjustments, a process which will be complicated by the fact that relatively few faculty retirements are expected in the years immediately ahead. At the same time, they will have to prepare for a new growth phase in the 1990s as the demographic curves swing upwards again (an echo of the postwar baby boom) and the number of faculty retirements increases.

My complaint about the present financing technique for Ontario universities, which I shall describe below, is that it does not promote flexibility within the universities individually, or within the system. The present technique is basically what was put into place in 1967 to support and encourage expansion, though it has since been modified to reduce the rewards for growth. While it provides individual universities with an incremental income for added enrolments, it does not give them enough money to give their students a fair shake. Class sizes increase inexorably, at least in those institutions and programs attracting more students than in the past, so that (for example) seminars are replaced by lectures, and graduating honours students find that they have no one to whom they can turn for a letter of reference. Retiring staff are not replaced, or are replaced only on a short-term basis by junior faculty with very heavy teaching responsibilities and no prospect of staying on, no matter how good their performance. These academic gypsies are sent packing after two or three years, so that they will have no possible claim to eventual tenure. And of course, library resources, physical facilities, and laboratory equipment are allowed to run down.

A major flaw in the financing technique, viewed in the context of a flexibility model for Ontario universities, is that the incentive structures built into it are all wrong. On the one hand it forces universities to accept more students, simply to stave off bankruptcy or government receivership; on the other, it provides the universities no significant rewards for adapting to lowered demand in certain disciplines and programs by reallocating resources internally. Universities are to a large extent collegially governed. It is important to recognize that they are quite intensively political institutions. They will not become less political if the financing technique is changed, but the conduct of their internal politics would certainly be affected. At present there is very little penalty for shortchanging students, and hardly any incentive to shift funds internally to the more rapidly growing departments, faculties, and schools. The misallocation of resources does not go unnoticed in government. This gives rise to a desire to accomplish through external administrative controls what is not being done through the present financing technique.

To respond to this problem by imposing central management on the Ontario university system would incur, as many conference participants have emphasized, heavy financial costs. Far worse than that, I think it would be extremely damaging to higher education in this province. A university is a facility for students and faculty, enabling them to learn and to teach, extending the frontiers of knowledge and expanding understanding. The university has no organizational goals subject to easy external measurement; its *raison d'être* is to provide resources and opportunities to the individuals of which (temporarily or on a career basis) it is composed. It is a supplier of services to its own members. In this sense it is very different from a business corporation, which has measurable outputs. There exists for private-sector firms a ready performance yardstick in the form of a balance sheet. Accordingly, the forms of governance appropriate to a university are very different from the administrative structures traditionally thought to be appropriate to a business enterprise. No firm of more than a few employees could survive more than a short while if run like a university; but a university run like a successful business corporation would not be much good.

In a nutshell, it is essential to maintain the principle of collegiality in universities. Without it, the capacity for higher intellectual achievement suffers, as the history of many institutions of higher learning has sadly demonstrated. And the principle of collegiality is, of course, incompatible with the central management of a university system, in which an external body has powers extending to budget allocation, planning, and program approval and evaluation. Such powers confer upon the administrator ultimate control over academic standards from the moment of admission to graduation, and over all personnel matters: the hiring of staff, the assignment of teaching and other duties, and the specification of work norms.

Obviously, not everyone – even within universities – shares my opinion on this. But I think it will be conceded that it is pertinent to the evaluation of a financing technique to ask whether it is adapted to the needs of the day (for expansion, contraction, or a 'steady state') and whether it is consistent with the form of governance or administration appropriate to universities, either generally or in current historical circumstances. I would be less than candid if I did not set out my own views on these large issues.

The government's position

It seems highly relevant to assessing the merits of alternative financing techniques to note that Ontario universities are being widely criticized for lack of flexibility, and especially for their inability to get rid of faculty who are either incompetent or (because of changing enrolment patterns) superfluous to teaching requirements. We cannot ignore the fact that voices, including ministerial voices, are being raised in favour of rationalizing university systems through institutional specialization. Incidentally, I see very little enthusiasm in government for taking these matters directly in hand. I do not attribute to ministers or to their advisors (as some apparently do) any grand Machiavellian scheme; rather, I sense frustration that the universities are unable to take matters properly into their own hands. Both in Ontario and elsewhere governments seem to have concluded that some mechanism will have to be found which can more effectively grasp the nettle of university reform. The ultimate concerns are (1) enhanced ability to meet society's need for expertise, in the form of highly qualified manpower, (2) more 'relevant' research output, and (3) effective cost control.

In the pursuit of legitimate public demands upon universities, governments are increasingly driven, apparently against their will and their past intent, to become more and more heavily involved in matters once considered to be essential features of university autonomy. The introduction of 'formula financing' for universities in 1967, replacing a system of discretionary grants, was designed to provide adequate public support for the teaching and research functions without involving government in the setting of admissions standards (except in the sense that it was necessary to distinguish university-level students from students of high-school level), in the internal allocation of funds within the universities (either among faculties and departments, or between teaching and research), in the design of curricula, or in the certification of degree programs. All these matters were to remain within the purview of the institutions themselves, as essential both to the quality of teaching and research and to efficient management. It was thought that if government became involved in these areas, which were recognized as properly lying within the sphere of university autonomy, the effects would be extremely damaging. Nonetheless, there is now no university in the province which retains effective control over the establishment of new academic programs; all programs are subject to external review backed up by the threat of decertification and consequent loss of funding; and the government may now be preparing to intervene in defining admissions criteria.

It is evident, then, that the financing technique adopted 17 years ago has not been able to accomplish what was expected of it, namely to provide public support for the universities while leaving them free to manage themselves without external interference. A combination of factors seem to explain this failure:

- governments' and the public's attitudes towards the universities have changed; the universities have become, in J.A. Corry's phrase, 'public utilities', and governments feel ultimately responsible for their management;
- the universities have moved from a phase of growth to a phase of retrenchment and adjustment;
- the financing technique adopted in 1967 was never capable of meeting the expectations its designers had of it;

– changes made in the financing technique since 1967 have magnified its inherent deficiencies.

Now, at a time when the government of Ontario has confided to a special commission the task of examining the future of the universities of Ontario, it is urgent to take a hard look at alternative financing techniques. The objective should be to see what if anything can be done to make a 'hands-on' approach to university financing and the management of the universities unnecessary. The objective should be to produce a better result without external administrative controls. I may say that I think it is much easier to do this in Ontario, with its relatively large number of universities, than in a province with only one, two, or three universities.

ONTARIO UNIVERSITIES: THE PRESENT FINANCING TECHNIQUE

Look at the data in Table 1, calculated from a report of the Committee of Finance Officers of the Universities of Ontario. The table gives, by university, for the fiscal year ending April 1982, the percentage of total operating revenue deriving from each of several sources. It shows that provincial government grants account for about 79 per cent of university operating revenues, ranging from a low of 70 per cent to a high of 91 per cent (or 83 per cent if one excludes the Ontario Institute for Studies in Education, which is clearly nontypical). Tuition fees contribute – depending on the institution, and excluding OISE – between 11 and 22 per cent. One might be forgiven for concluding, especially since fee levels are controlled by the province, that all one needs to know about the financing of Ontario universities is how much the province is willing to spend, and by what procedure this sum of money is distributed among the universities.

But beware! University accounts comprise a number of 'funds' which include, besides the 'operating fund' to which the figures just reported pertain, funds for noncredit instruction, ancillary enterprises, and sponsored research; each university has also a restricted-purpose trust and endowment fund and a capital fund. If our job is to describe a financing technique for the current operations of universities, can we restrict ourselves to examining the sources of what the university accountants call 'operating revenue'? Obviously not. But

TABLE 1
Operating revenue[a] by source (percentages) for Ontario universities, fiscal year ending 30 April 1982

University	Provincial Operating Grant[b]	Tuition fees	Gifts and non-gov't. grants	Investment income	Other
Brock	75.8 (74.3)	20.6	0.0	1.4	2.2
Carleton	78.9 (78.2)	18.6	0.1	0.0	2.3
Guelph	78.4 (77.7)	14.8	0.0	4.7	2.1
Lakehead	77.4 (66.2)	18.7	0.0	2.9	1.0
Laurentian	79.1 (61.4)	16.5	0.0	0.1	4.2
Algoma	75.8 (61.5)	16.2	2.7	3.1	2.2
Nipissing	70.4 (61.5)	21.9	0.0	7.3	0.4
Hearst	83.4 (49.5)	11.1	0.0	0.0	5.5
McMaster	77.3 (76.4)	14.7	0.2	3.8	4.0
OCA	77.5 (76.6)	20.2	0.0	1.5	0.8
OISE	91.4 (74.7)	6.2	0.0	2.3	0.1
Ottawa	81.7 (74.7)	15.0	0.0	1.9	1.4
Queen's	82.0 (81.3)	15.3	0.0	0.1	2.6
Ryerson	81.0 (80.1)	17.8	0.0	0.9	0.3
Toronto	78.9 (78.2)	14.4	0.0	2.3	4.4
Trent	77.5 (66.3)	19.1	0.0	0.8	2.6
Waterloo	78.5 (77.1)	18.3	0.0	2.4	0.7
Western	79.5 (78.5)	16.7	0.0	1.7	2.1
Wilfrid Laurier	72.6 (71.2)	21.1	0.0	5.2	1.1
Windsor	75.4 (73.6)	21.8	0.2	2.2	0.4
York	74.9 (74.0)	22.1	0.5	0.8	1.8
Total	78.8 (76.5)	16.7	0.1	2.0	2.4

NOTES: When making comparisons among institutions, please refer to the Committee of Finance Officers' *General Caveat and Committee Report.*
Percentages may not necessarily total 100.0 per cent due to rounding.

[a] Operating revenue excludes revenue from the following funds: noncredit instruction, ancillary enterprises, sponsored research, trust and endowment, and capital.

[b] Figures in brackets give the *formula-determined* portion of the grant. The difference between the two figures (2.3 per cent for the province as a whole) represents the discretionary portion of the grant.

SOURCE: Calculated from Committee of Finance Officers of the Universities of Ontario (1982), p. 41.

how widely should one cast the net? The guiding principle I would propose is to include all noncapital funds that contribute to the academic functions of the university. On this basis I would include the sponsored-research fund and the trust and endowment fund, but exclude noncredit instruction (most or all of it, presumably, at a pre-university level) and ancillary enterprises, comprising items such as university residences. The resulting survey of sources of university incomes is presented in Table 2, which like Table 1 is for the fiscal year 1982. This second table gives not only a different impression of the aggregate situation, but reveals much wider variation among institutions, hinting at considerable diversity within the 'system'.

Table 2 shows that even with a broader definition of current income, the provincial operating grant remains the largest source of funds for all universities, though in two of them it supplies barely over half of the total and in five others, less than two-thirds. The financing technique is evidently much more complex than one might infer from Table 1, partly because more than a single funding mechanism is shown to apply, and partly because research support, which is a major source of revenue for some universities, derives only in relatively minor degree from the provincial government. Moreover, gifts and nongovernment grants, which contribute scarcely at all to the general operating budget, supply a large proportion of trust and endowment funds.

Thus a quick survey of the sources of current university incomes, since all sources are either governmental or affected by government policy, suggests that the financing technique for Ontario universities is a multifaceted one. It is the joint product of loosely co-ordinated activities of the federal government and the province of Ontario. Its main features are as follows.

1 There is a provincial grant which finances between 50 per cent and 83 per cent of the current academic activities of the universities. Several points should be made about this grant:

a) It is unrestricted as to purpose, but is understood to support both teaching and, to a large extent, research. It covers the salaries of faculty, administrative officers, and support staff, as well as expenditures on items such as plant maintenance, student services, and library acquisitions.

b) The grant, which prior to 1967 was determined on a discretionary basis, has since then been allocated mainly according to a formula which was originally, and to some extent remains, based on weighted enrolments or a system of 'basic income units' or BIUs (enrolments in the more expensive programs generate more BIUs). However, the formula has been extensively modified so that now it

TABLE 2
Sources of current income supporting the academic activities of Ontario universities (percentages) for fiscal year ending 30 April 1982

University	Provincial Operating Grant	Fees	Other operating income	Sponsored research	Trust & endowment fund[a]	Total[b] ($000)
Brock	70.7	20.2	2.4	5.6	1.0	21,500
Carleton	67.8	17.7	0.4	11.1	3.0	68,442
Guelph	52.1	10.3	4.0	30.5	3.1	107,647
Lakehead	69.3	17.7	2.6	8.8	1.6	22,686
Laurentian	73.6	16.5	2.9	6.0	1.0	20,828
Algoma	76.9	16.4	6.1	0.0	1.0	1,915
Nipissing	70.0	21.6	7.6	1.3	0.0	3,273
Hearst	82.6	12.1	2.3	3.0	0.0	644
McMaster	50.4	10.0	4.8	26.0	8.7	122,428
OCA	76.4	20.4	1.7	0.0	1.5	7,593
OISE	80.1	5.5	2.0	12.3	0.0	20,402
Ottawa	64.8	12.8	1.7	13.8	6.9	117,929
Queen's	59.4	11.8	1.3	19.0	8.6	108,187
Ryerson	79.0	17.7	0.7	0.2	2.4	52,984
Toronto	59.1	11.8	4.0	21.6	3.5	349,180
Trent	70.1	18.7	1.6	4.6	4.9	14,884
Waterloo	63.3	14.8	2.4	17.3	2.1	108,590
Western	60.5	13.8	1.8	19.5	4.4	147,616
Wilfrid Laurier	70.1	21.2	5.3	1.4	2.0	24,875
Windsor	69.4	20.7	1.9	7.7	0.3	55,462
York	69.2	20.7	2.3	6.7	1.0	102,033
All universities	62.3	14.0	2.8	17.0	4.0	1,479,080

NOTES:
a Figures in the trust and endowment column understate slightly the gross revenues from these funds. The figure reported is a net figure, after transfers have been made to other funds, e.g., the operating fund (where they show up in this table as part of 'other operating income'), the sponsored-research fund, and the capital fund.
b 'Total' excludes revenue from the following funds: noncredit instruction, ancillary enterprises, and capital.
SOURCE: Calculated from Committee of Finance Officers of the Universities of Ontario (1982), pp. 52-153.

reflects mainly the enrolment patterns of the past (particularly a 'base period', 1975-8). The effect of the current formula is that the distribution ratio among universities cannot change much even if enrolment patterns change a lot.

c) The formula is used for allocative purposes only. The provincial government first decides how much it is going to spend on the support of the current activities of the universities; the size of the pot is then reduced slightly by drawing on it to make discretionary (nonformula) grants that take account of special cost factors affecting individual institutions; and the remainder is distributed according to the formula. No attempt is made to use any formula to determine how much money the universities need to meet their instructional and research responsibilities.

2 Tuition fees are, in practice, controlled by the provincial government through the setting of a 'formula fee'. Universities are allowed to charge up to 10 per cent above the formula fee, but beyond that level the additional revenue would be deducted from the provincial grant. This effectively nullifies the fact, as noted in the province's *Operating Formula Manual*, that 'Through their governing Acts, Ontario universities have full legal authority to establish their own fee levels' (Ontario 1983, p. 132). The practical consequence is that universities have no way of significantly expanding their incomes, except through research grants and contracts and through nongovernmental gifts and donations, beyond the 'Basic Operating Income' identified in the calculation of the general operating grant.

3 Student aid is provided in the form of loans under the (federal) Canada Student Loans Plan, which is administered by the province, and nonrepayable grants under the Ontario Student Assistance Plan. Student aid is part of a financing technique for the universities in the sense that it presumably raises enrolments, thereby increasing the universities' fees income. The total number of enrolments across the province may also have some impact on the level of provincial spending on operating grants; and the distribution of students among universities affects – though only slightly – each university's share of the whole. Moreover, in the absence of provincially-administered student aid, the universities would presumably have to spend larger sums on student assistance themselves, and might also feel constrained to lower their fees. The additional expense and/or fees revenues forgone would have the result of further burdening the universities' budgets, unless other sources of funding were expanded correspondingly. While all these factors do evidently have some bearing on university finances, it would take a brave person and many strong assumptions to put some numbers on them. About all that can be done to place the subject in perspective is to look again at Table 2,

which shows that most institutions derive between 10 and 20 per cent of their current incomes (as earlier defined) from student fees.

4 Sponsored-research funds, which account for a widely varying percentage of current university incomes (up to about 30 per cent), derive from several sources. The federal government, through grants and contracts, supplies about half; gifts and nongovernment grants contribute a little less than a quarter; and the provincial government about an eighth. Although some contracts do cover the cost of faculty time and include a percentage of direct costs as an overhead charge, grants typically do not. Most external research support is therefore only partial funding, a supplement to what the universities contribute out of their general operating fund in the form of faculty salaries, plant maintenance, etc. This fact was implicitly acknowledged by those who devised the original operating-grants formula, in which the heavy BIU weighting assigned to graduate enrolments (a doctoral student 'earned' the university six times the sum generated by an arts undergraduate) was justified on the grounds that to offer a good graduate program a university would have to be fairly heavily engaged in research. Research support and the provincial grant were recognized as complementary funding mechanisms within an overall financing technique.

5 Our brief survey of the financing technique for Ontario universities should also take account of one further element, a package of tax expenditures both federal and provincial. These are revenues not received by government because the tax base has been narrowed by various exemptions and deductions. Perhaps 'jumble' would be a more appropriate word than 'package', because obviously no one has introduced a complementary set of tax expenditures for the support of universities, and probably most of the relevant policy measures were not designed with an eye to their impact on the universities. The difficulty of discussing this subject is further underlined by the fact that I know of no way to estimate the magnitude of the sums involved. Most of these tax expenditures presumably bear on the revenue side of the universities' accounts, as occurs with income tax deductions for tuition fees and with corporation tax deductions for research and development costs (some of which may result in issuing contracts to universities or to individual university faculty). Other tax expendi-

tures operate to reduce universities' costs, as in the case of exemptions from federal sales tax on equipment used for instructional purposes.

OPTIONS FOR CHANGE

The rest of my remarks will concentrate on three elements in present-day financing techniques: operating grants, student aid and related fees policies, and research grants and contracts. These three funding mechanisms are closely related to each other, in the sense that major changes in any one of them would probably have undesired effects on the universities if not introduced in conjunction with counter-balancing changes in one or both of the other funding mechanisms.

I did once propose an institutional solution to the problem of co-ordinating changes in all three funding mechanisms (Leslie 1982), but it is not my intention to ride that hobby-horse again today. I shall simply remind you that the task of co-ordination is complicated by the fact that both orders of government are directly involved in research support and in providing student aid. Both the federal government and the provinces could (though I hope would not) unilaterally revamp their policies in these areas. Moreover, the federal government contributes importantly to provincial revenues through a system of fiscal transfers, some of which are labelled as being for the support of postsecondary education. In view of its financial contribution, the federal government claims a voice in provincial policies regarding postsecondary education to meet 'national objectives'. The monies involved may be withdrawn at the discretion of Parliament, or could be diverted wholly or in part to other programs (including student aid and/or research support). Moreover, any major policy change on the part of the provinces, if considered by the federal government to be inconsistent with 'national objectives' in the field, could trigger a punitive response. All this simply re-emphasizes how much the financing technique for Ontario universities – as for universities in other provinces – is jointly set by both orders of government. The assertion holds in spite of the fact that policy initiatives at the one level, and consequential adaptations at the other, are frequently made without consultation. In other words, co-ordination is partial and tends to be implicit.

The fact that it is difficult to achieve effective federal-provincial co-ordination reinforces a principle that I would wish to see respected anyway on other grounds. The principle is that changes be introduced purposively but gently, in an incremental and experimental fashion. Once again I emphasize the unwisdom of thinking of funding mechanisms as alternatives: it may be neat, but it would be foolish, to contemplate sweeping away the present system and replacing it with a new one – for example, cutting out subsidies for institutions and putting all public funds for higher education into student aid, as in that hardy perennial, the voucher scheme (see below). We have now in Ontario and throughout Canada a fairly complex financing technique, and the only prudent course of action – if it is agreed that changes are required – is to introduce slight changes in the design of individual funding mechanisms and/or to modify their importance relative to each other. By acting slowly, complementary changes can be made elsewhere. In a few years' time we could have a noticeably different financing technique, without ever having taken a desperate decision to jettison the present one. Please do not mistake this as justification for aimless adhockery. If incrementalism is to work we should have some sense of what experiments are most promising. Then, if the results appear to be good, we continue further along the same track; if the disadvantages outweigh the benefits, we backtrack, wiser but not greatly sadder.

In this spirit, I propose to canvass some options for the partial redesign of the three main types of funding mechanism, and for their recombination within a progressively modified financing technique.

Operating grants

Increasing discretionary elements

One option is to increase the discretionary element in the provincial grant. If one went all the way with this option, formula financing would be phased out in favour of a form of central management of the university system in Ontario. Nominally extensive powers might be left in the hands of university administrators, but the latter would be financially responsible to a supervisory body (ministry or commission) whose control of the purse-strings would enable it to exercise ultimate decision-making authority. I have already explained why I would be unalterably opposed to such an occurrence. However, this is not what I mean when I propose that we ask ourselves whether a marginally larger proportion of the provincial grant might usefully be allocated on a discretionary basis.

There is a case to be made, I think, for giving a university extra funds on a short-term basis to facilitate changes that appear academically desirable and financially advantageous in the longer run, while entailing additional costs during the period of actual implementation. Some of the changes I have in mind would be structural, involving program innovation and/or pruning back existing programs, departments, faculties, or schools. In other cases the supplementary grants would merely facilitate personnel management. They would compensate universities for retraining faculty who could desirably develop new areas of specialization, provide financial assistance for early retirements or career switches, and so forth.

Narrowing the range of costs

A related change would be to narrow the range of costs presumed to be covered by the formula grant. Different categories of expenditure (e.g. libraries, plant maintenance, academic salaries) would be identified, with some being funded on a discretionary basis and others being supported out of the general grant. Something like this was once proposed for the province of Manitoba, on the reasoning that every year increases in academic salaries observably ate up all available funds. Those proposing the scheme believed that the only way to prevent the universities from running down facilities and services was to protect certain parts of the university budget against salary claims by the faculty (Manitoba 1973).

'Size-of-the-pot' formulas

A more radical innovation, also probably along the lines of increasing a supervisory body's control of university operations, would be to start using a formula for purposes additional to the present, merely allocative, one. A formula might be used to establish the universities' entitlement to funds both individually and collectively. An indecorous term is a 'size-of-the-pot formula', meaning that it would be used to estimate the magnitude of the costs that the universities could reasonably be expected to incur, and therefore (after making allowance for fees and other income) the size of the grant they could justifiably claim from government. This subject is too complex to go into any detail here on it, but I should like to hint at what is involved.

One implication of using a formula based on enrolment units is that it makes no financial difference to the university how many courses are included in a given degree program; similarly, university finances are not affected by the number of hours of formal instruction in a course. Perhaps these things are presumed to be constant across universities. Be that as it may, in the United States a 'course enrolee' or alternatively a 'credit hour' is generally used as the basic unit in a grants formula. A university's share of the units generated by all institutions in the system is its share of the aggregate state grant.

Such formulas, like the Ontario one, do not much assist government in making decisions about the size of overall expenditure on universities. Whether the formula is based on enrolment units, course enrolees, or weekly student hours, the dollar amounts attached to the base unit are likely to reflect historical cost levels in the system, with incremental changes from year to year reflecting anticipated changes in student demand, inflation levels, public attitudes towards the universities, and the condition of the public treasury. For some tastes, this is too much 'muddling through'. An attempt may be made to increase the rationality of decision-making by adapting the formula to determine the 'size of the pot'. This is done, if crudely, by making *faculty entitlement* the base unit in the formula, and determining faculty entitlement as follows:

$$\textit{number of faculty} = \frac{\textit{weekly student hours}}{\textit{average class size} \times \textit{average faculty load}}$$

(This equation and the one immediately following are drawn from Sheehan 1977, pp. 306-8.) As long as 'average class size' and 'average faculty load' are calculated across the system and not individually for each university (i.e., the denominator in the equation is constant across the system), the switch to some notional 'number of faculty' or to 'faculty entitlement' as the base unit in a formula does not affect the proportions in which the available funds are distributed among institutions. What it does do, however, is adapt the formula so that it can used by a funding authority (department of education, or universities commission) to inform policy decisions about the level of support universities require. In effect, the formula may be used in deciding whether the universities are generally understaffed or overstaffed – that is, whether they are really as hard-pressed as they claim to be. The point is, that 'average class size' and 'average faculty load' may be statistical averages, or they may be treated as notional figures, reflecting what the funding authority considers to be reasonable. If the latter, and if 'faculty entitlements' are compared with actual faculty complements, the formula may point to overfunding or underfunding across the system.

Once this transformation of the purpose of the formula has been accomplished, the rest of the way towards the rational management of a university system is (conceptually speaking) easy. The funder has already become the planner. All it takes to assume full control is to make the equations more complex and to combine several of them such that a formula is constructed that both determines the size of the pot and its distribution among universities. From 'faculty entitlements' one moves easily to 'salary budgets', as follows:

$$\text{faculty salary expense} = \frac{\text{weekly student hours} \times \text{average faculty salary}}{\text{average class size} \times \text{average faculty load}}$$

This is the previous equation multiplied on each side by the statistical 'average faculty salary' across the system, or by a notional 'average faculty salary' set at a level that the funder considers just and reasonable. Either way, 'faculty salary expense' may be considered to be a budget entitlement.

From here one proceeds *ad libidum* along the path of budget control and system management. Separate equations may be devised for 'faculty salary expense for instructional purposes', and 'faculty salary expense for research', according to the proportion of faculty time one thinks should be spent on the two activities (assuming a distinction can be made between the two, which I dispute). And then on to the costs of central administration, athletic facilities, and so forth.

None of this do I recommend. But it is my job to set out the options, and this is one of them. My preference is to devise a financing technique which leaves more, not less, decision-making authority in the hands of the universities individually. The problem, of course, is to find a way of doing this while increasing their capacity for self-renewal in a period of slow-growth, steady-state, or enrolment decline – and at the same time, keeping public expenditures down to a level that is nonetheless consistent with the maintenance of high standards. Part of the answer here lies, in my opinion, in giving more weight to the fees/aid and the research-support components of the financing technique (as will be argued later); and part of it lies in redesigning the operating-grants formula in ways not yet referred to.

Enrolment-sensitive formulas

An option to consider, I think positively, is to make the formula once again more sensitive to changing enrolment patterns. Another way of saying the same thing is to suggest that the historical element in the formula should be considerably reduced. I acknowledge that an averaging provision is clearly desirable, and maybe it should be longer than the three years now in effect. On the other hand, it is difficult to find good reasons for the present arrangement whereby, supposedly in perpetuity, more than one-half of a university's 'Basic Operating Income' (and in consequence about two-thirds of the provincial grant) is based on enrolment patterns extant only from 1975 to 1978. It may be quite sensible to adopt a base-year or base-years arrangement as an interim measure, to last while the government works out a financing technique for the future, or to reduce risk-taking by universities that are trying to restructure in some way; but to go forward indefinitely on this basis has produced increasingly anomalous and unsatisfactory results.

With any funding arrangement in which the historical element is very strong (as it is in Ontario, but even more so in some other provinces), the internal problems of adjustment are likely to be exacerbated. University administrations, and their academic senates, know that no matter how the university handles its staffing problems or what structural changes it makes, it cannot significantly affect its operating grant from the province; the grant cannot be much raised, and perhaps just as significantly, it cannot be much diminished either. How the university conducts its affairs is simply irrelevant.

Still, I think I understand what motivates the tendency of recent years to make the formula insensitive to changes in enrolments. It may well be a legitimate policy goal to discourage universities from poaching each others' students when the market, so to speak, is unsettled or in decline. I frankly do not know what to think about this. It seems to be one aspect of a larger problem, namely that all enrolment-based formulas offer rewards for growth and impose a penalty on contraction. It made perfect sense to do this when, as during the 1960s, a prime goal of higher-education policy was to increase participation rates and to expand the system. In the conditions of the 1980s, merely to maintain the system in a steady-state condition requires further increases in the participation rate. Is this desired, or desirable? If not, then the conundrum we all face is that policy should reward good performance and penalize poor performance, without placing a premium on size or at least without buoying up enrolments across the system.

I am not sure there is a satisfactory way out of this dilemma, but I think one implication is that the relative importance of the general operating grant within the overall financing technique for universities ought probably to be reduced. The way to do this is to place greater weight on the fees/aid and the research-support components. But before examining possible options in these areas, there is one more option to consider under the heading of operating grants.

Formula weights

To the extent that the formula grant is based on current rather than historical enrolments, the question of formula weights becomes important. The imposition of external administrative controls on academic programming, especially on the introduction of new programs, is *prima facie* evidence that formula weights are too generous for the class of programs that universities appear bent on introducing. Necessarily, since the basic arts and science undergraduate programs are offered in every university, the new ones are at the graduate level and/or are specialist and vocational in nature. High formula weights are not the only conceivable explanation for the universities' efforts to introduce such programs. Other possible explanations are:

- that universities are more concerned about their prestige than about their finances, and therefore expand graduate programs unwisely;
- that generalist programs are losing students, and universities want to compensate by introducing specialist programs;
- that decision-making within the universities defies explanation anyway and it is gratuitous to blame events randomly on one variable.

Nonetheless we ought to enquire whether the present formula weights have undesired steering effects on university programming. Quite apart from the issue of introducing new programs, there is the important question of whether the weights induce universities to lavish more attention and resources than they should on certain programs (especially those at the graduate level) and to neglect the students enrolled in others.

The range of weights in the Ontario formula is from 1 (arts undergraduate) to 6 (doctoral candidates). In other provinces the weights assigned to enrolments in doctoral programs at various times have been: 3, 4, 6, 8, and 10 (Leslie 1980, p. 255). Costing techniques for programs of academic instruction are not, in my opinion, sufficiently reliable to provide a rational basis for assigning weights in a formula. The fairness or unfairness of the existing assignment of weights is therefore entirely conjectural.

In a sense, though, fairness is not the issue. Steering effects depend on *perceived* costs and rewards, not actual ones. I have no data on such perceptions. However, my impression is that university administrators regard graduate enrolments, particularly at the doctoral level, as money in the till. This is an attitude that may be quite rational, regardless of the magnitude of estimated program costs, because these always refer to average costs. If one assumes, as does appear warranted, that almost all the more advanced programs (except, probably, those involving clinical training) operate below optimal scale, then marginal costs will be substantially lower than average ones. This in itself offers considerable inducement to expanding enrolments within existing graduate programs.

The most important point, though, is the one mentioned earlier: that when the weights were first set, it was presumed that they included an allowance for research, and it was assumed that universities with a lot of graduate programs would necessarily be more heavily involved in research than basically undergraduate institutions. The provincial grant, as allocated by formula, would cover the salary and overhead costs of research, except research done on contract. The real question, then, is whether one wants to maintain the present close link between general funding and support for research: and my answer to this is no. As much as possible, faculty who are employed in universities that concentrate on undergraduate instruction should have research opportunities as great as those in universities heavily engaged in graduate work. In some disciplines – those where having a corps of graduate students is essential to, or at least is a great advantage in, the conduct of research – the research opportunities in the basically undergraduate university will necessarily lag behind those available in universities more oriented towards graduate programming. But policy should be directed towards compensating for this disadvantage, not towards reinforcing it.

All this suggests the widsom of introducing a package of reforms that involves compressing the range of formula weights and expanding support for research conducted independently of graduate instruction. We shall return to this subject after looking at options for reform of the fees/aid component of the financing technique for Ontario universities.

Fees policies and student aid

Although tuition fees contribute a much smaller proportion of university incomes than operating grants, policies on fees and student aid raise issues that are every bit as important as those pertaining to grants to institutions. These issues include:

- how much the students or their families contribute to university operating costs as compared with the amount contributed by the public through government;
- accessibility to university, participation rates, and (in the longer run) educational attainment levels among the adult population;
- structural changes in university systems: how the uniformity of fees or conversely the existence of fee differentials among institutions affects, for example, relative quality.

These are the issues that underlie the choice of financing technique: whether to subsidize students or to subsidize institutions, or in what proportions to do both.

What are the options? Most of them involve controlling fees, and one does not. First we consider those that do require governments to set fee levels, or at least to set maxima.

Reduced fees

The first option is to reduce fees, at least in real (inflation-adjusted) dollars. The usual rationale for doing this is that there remain today significant financial barriers to attending university, and that student loans and grants cannot overcome those barriers as effectively as fee reductions. An implication is that if fees are kept as low as possible, access will be improved and participation rates will rise.

This may be judged important for its contribution to achieving equality of opportunity (the equity argument) or to serving public purposes such as economic growth and cultural development (the public-interest argument).

Let us assume we agree with the objective of improving access and raising participation rates. Is it really true that financial barriers to university attendance are important at current fee levels? To the extent that they are, are fee reductions a more efficient way of eliminating those barriers than the improvement of student-aid packages? All the evidence, and it is massive, points the other way. Although family-income levels among university students are considerably above the social average, nonfinancial factors – parental encouragement, school grades, and the student's self-confidence – have been demonstrated to be more significant determinants of educational attainment than financial factors. Attrition in the high schools is substantial, and the make-up of the matriculating class closely approximates that of the university entrance population. This indicates that selection has taken place prior to the point at which accurate estimates of the costs of university attendance could figure seriously in young people's plans to continue their education through to university. Consequently the rationale for a policy that primarily affects high-school graduands is weak if it exists at all (Leslie 1980, pp. 12-31, 340-2).

This is not to say that 'money does not matter'. Obviously it does. For one thing, high-school students frequently hold exaggerated ideas of university tuition charges; but more important than this is the financial burden of income forgone, particularly in low-income families with several children, where the older ones must frequently leave school in order to support themselves or contribute to family incomes. The evident importance of these factors cannot be addressed by making changes in tuition fees, but require a much more far-reaching set of policies including better counselling in the schools, and financial assistance to low-income families with children in high school as well as to the minority who make it to university.

Fees proportional to costs

Another option is to peg fees at some assigned proportion of estimated program costs. In consequence, fee levels would differ much more widely by program than at present. Supporting this is the observation, for example as made by Stefan Dupré (1977), that the programs that can be expected to have the highest long-term financial payoff (e.g., medical training) are precisely those for which the student contributes the lowest percentage of the costs. At a minimum, students might be expected to pay an equal percentage, and there is a good argument for their paying more. Says Dupré: 'There is no question that tuition fee determination in Ontario has totally ignored the issue of equity among students that is posed by the principle of benefits received' (1977, p. 50).

It is difficult to know what 'the principle of benefits received' is; in any case, the principle would be extraordinarily problematic to apply. On the other hand, a rule-of-thumb according to which tuition fees might be set at some fixed percentage of program costs is both easy to understand and (at least in a rough way) applicable. Dupré did it by assuming the appropriateness of the Ontario BIU weights, noting that these weights do not attempt to distinguish between instructional costs and other costs (research and public service). By contrast, the recommendation of Ontario's Commission on Post-Secondary Education (COPSEO) was to distinguish instructional from other university costs, and to ask students to pay one-third to one-half of the instructional costs. If they paid half, fees would have ranged, at the 1970/1 cost level, from $625 to $1,500 (Ontario, 1972, p. 44). In 1984 dollars, the range would be about $1,850 to $4,500.

Whatever the merits of these proposals, it is evident that fee differentials would increase sharply under any scheme that sought to match them to program costs. If the students were expected to pay a proportion of costs (whether of instruction only, or of associated costs as well), all fees would rise considerably. Either way, complementary changes in student-aid programs would have to be introduced.

Loan schemes

It is doubtful that many of those who wish students to bear a significantly heavier proportion of university operating costs have carefully sifted the evidence, such as it is, on the probable impact that such a policy would have on access and participation rates. Those who are concerned about these matters may, however, find encouragement in an academic literature that points out: (a) that university students come disproportionately from the higher-income groups, with the consequence that the public funding of universities effectively transfers income from the relatively poor to the relatively rich; and (b) that loan schemes can be devised to assist highly motivated people, regardless of family-income levels, in paying much higher fees than they do at present.

The loan schemes are traceable to a plan put forward by Milton Friedman (1955) and subsequently dubbed the 'EOB' (for equal opportunity bank) scheme. Several Canadian versions have been put forward, a frequently cited example being the 'CORSAP' or 'Contingent Repayment Student Assistance Program' suggestion of G.C.A. Cook and D.A.A. Stager (1969). This and other contingent-repayment schemes provide for loans to be repaid as a surcharge on the income tax; students with low incomes in the years following graduation would pay back only a part of the loan, or conceivably none at all. The financial risk involved in borrowing is thus eliminated.

The basic idea is far from unattractive, but any optimism that an all-loan program would have little adverse effect on accessibility must be doubted. One's guide on these matters should not be *a priori* reasoning, but the abundant sociological evidence that reveals the unwillingness of young people, particularly from lower-income levels, to assume heavy long-term debt. The contingent-repayment idea is of course designed precisely to overcome such 'loan aversion' by eliminating the risk involved in borrowing, but the truth is that we cannot predict how young people would react to a plan based on this principle. My conclusion would be that a contingent-repayment scheme might reasonably be devised and put into place – but *before* shifting costs to students. Any shifting of costs should occur only at a later time, and then only to the extent shown to be consistent with maintaining or improving accessibility.

A compromise arrangement, of course, is to raise fees but to make means-tested grants so that, in effect, only those students with considerable financial resources pay the full increase in tuition charges. In that case students who cannot easily draw on personal or family resources would pay none of the increase or even obtain a net financial advantage.

The 'voucher' scheme

Regardless of the proportion of university operating costs borne by students, the question arises whether the public subsidy should be directed (in the first instance) to institutions or to students – or in what proportion to each. If the subsidy went mainly to students the burden on the public treasury would be the same, but the impact on the universities would be substantial. The precise nature of that impact would depend on details of the scheme. An immediate effect would be to make university incomes very sensitive to changes in enrolment.

One way of transferring a higher-education subsidy from institutions to students apparently owes its initial formulation, as does the contingent-repayment loan scheme, to Milton Friedman. Friedman has suggested (1955, 1968) that if a state insists on subsidizing education – primary, secondary, or postsecondary – the 'least bad' way to do it would be to give students vouchers or coupons for educational services. These vouchers could then be 'cashed' at any recognized institution. The voucher would pay some portion of the fees, and the institution could redeem its cash value from the government. There would be no other form of public support for education. In the result, schools and universities would be guided by market demand for the services they provide, and the level of demand for services would be affected in turn by the level of subsidy.

Many variations on the voucher scheme can easily be devised. The amount of subsidy could vary by type of program, giving government considerable (though indirect) control over the relative size of various programs of instruction. More direct control could be obtained by placing quotas on each type of program, or allocating vouchers according to proposed discipline of specialization. There could be a rule that a person who received vouchers to support his way through one university program, especially if a professional one, would thereafter be ineligible for subsidization in another. Higher-value vouchers could be issued to those of slender financial means, or alternatively to the most promising candidates. Depending on which features are applied, the vouchers would be in the character of scholarships, or of bursaries.

In view of the almost limitless variations in the voucher scheme, any overall evaluation would be virtually impossible to make. I shall therefore limit myself to two remarks. First, the scheme lends itself to achieving close governmental control over university programming in the aggregate, though not over the structure of a university system (institutional specialization, and so forth). Second, the scheme would stimulate competition, possibly cutthroat competition, among universities for 'market shares': if this can be tolerated, or is seen as a virtue, then the voucher scheme might be a response to the problem (as raised in our earlier discussion) of giving universities adequate incentive for high-quality performance without thereby encouraging them to fill the lecture halls with warm bodies.

Deregulation of fees

The final option on fees/aid policies is to let the universities set their fees at whatever level they consider justifiable and prudent, and to compensate through student-aid schemes for any ill effects of high fee levels, whether in particular programs, in individual universities, or across the system.

In practice, fee levels would necessarily remain constrained by government policies, federal and provincial, on student aid. Obviously, government could not hand out grants or subsidized loans to students, to cover whatever fees the universities decided to charge. This would allow institutions to collect through the students a public subsidy that government was unwilling to give directly in the form of operating grants. In other words, if by raising fees the universities automatically triggered a rise in grants to students, they would have acquired what every taxpayer and every interest organization dreams of: the power to tax the state. I am not proposing that the state consent to this.

A final comment on fees/aid policies: fee differentials among institutions, if large, could result in inequality of access to various universities. There might be a stratification of universities by average wealth of their clientele, with the universities that attracted the *jeunesse dorée* being, by virtue of their greater budgetary freedom, higher-class institutions in two senses. It is likely that universities with higher-than-average fees would be alive to this, and would complement public student-assistance programs with programs of their own. If the universities concerned did not establish their own bursaries fund, they could be required to set aside a portion of their 'extra' fees income for this purpose.

Research grants and contracts

The place of governmental research grants and contracts within an overall financing technique for universities is a subject which is dominated by one question: ought teaching and research to be funded separately from each other, each on a basis appropriate to that particular function? Any attempt to do this would undoubtedly shift a fairly large proportion of public funding out of enrolment-related and other general grants, which would now be understood as a subsidy uniquely for instructional purposes. A corresponding sum might then be channelled into research grants and contracts. This would not mean that the volume of research, or the time and other university resources spent on it, would necessarily go up; in some universities it might well go down. The point would be that research funding would cover faculty time and overheads associated with research effort, which (as I have already noted) grants at present usually do not. There are exceptions to this rule, especially in medical research, but the statement remains a fair generalization.

I am not one of those who believe that a rigorous or consistent distinction can be made between teaching and research costs. What prevents this is that the two functions are intertwined. Instruction and publication are joint products, in the sense that to a large extent faculty spend their time doing things that give rise to both. Some proportion of faculty time can of course be attributed uniquely to the one activity or the other, but a lot of it cannot. This vitiates attempts to produce separate estimates of the costs of the teaching and research functions. And if the two cannot be separately costed, it makes no sense to separate the funding.

On the other hand, operating grants (exclusively provincial) and research grants (predominately federal) are complementary elements in the present financing technique. The mix could evidently be changed, and the question is whether the result would be beneficial. To my mind, this is a much more useful definition of the problem than to agonize over what activities are research-oriented and what other activities are teaching-oriented, so that each may be funded in its own way. What we need to do is to enquire into the impact of research grants and contracts on the quality of both teaching and research, and also on the structure of universities and university systems.

Sponsored-research income has an impact on the overall character of universities, and the structure of the university system, out of all proportion to its contribution to university finances. In Ontario this contribution has increased considerably in recent years. For the more research-intensive universities, the percentage of current incomes deriving from research grants and contracts rose by 5 per cent or more in just three years (fiscal 1979 to fiscal 1982). As we saw in Table 2, there are now five Ontario universities that obtain approximately a fifth or more of their current incomes from research support. While this falls considerably short of the fifty per cent or more that leading American universities obtain in the form of research support, the Ontario figures should be understood in context with our quite different system of research support. Our data considerably understate research effort.

Research funding and graduate work are closely interrelated. So far I have stressed one aspect of this interrelationship: that part of the provincial operating grant goes, in effect, to the support of research, and that this explains the present system of BIU weights. But there is an obverse side to this coin: research grants, particularly in the natural sciences and engineering, are essential to the conduct of graduate work. They contribute in an important way to the support of graduate students. Faculty who are successful in obtaining funds from the federal granting councils and other agencies are especially valuable to their universities, in the sense that they bring in graduate students and thus, to some extent, provincial funding. The same applies in the humanities and the social sciences, though to a much lesser degree. In this way research funding helps to shape the character of individual universities. Since grants are awarded on a competitive basis, research funding is the aspect of the financing technique for universities which is most sensitive to, and is most likely to reward, good performance. It also has the effect of helping provincial universities to look beyond provincial borders, making them in some degree part of a national and even an international system. This is a service whose importance cannot be overstated.

Research funding is a feature of our financing technique that, because it alone is directly related to performance, ought to be reinforced. I would like to see its relative contribution to university finances increased. The way to do this is to expand the range of costs eligible for external support. Naturally, this would give a great advantage to those universities heavily engaged in research, if no complementary changes are introduced elsewhere. Hence I favour, as part of an integrated package, reducing formula weights for graduate programs and, at the same time, increasing the public subsidy for research. As already hinted at, this is a policy innovation that should be attractive to universities that do not have large graduate programs, since it would help their faculty to become or remain involved in research activity. It would add some leaven to the university system without simply rewarding size.

Changes of the kind I propose would also re-emphasize the role of the federal government in the financing of Canadian universities. In effect, what I am suggesting is that some of the funds now transferred to the provinces as a more or less unrestricted fiscal transfer be channelled into research support. This must be done in a way that respects the provincial governments' primary responsibility in all aspects of education, and takes account of their legitimate concerns. In particular, the provinces must retain the capacity to design a network of postsecondary institutions that suits their own needs as they see them. But this takes me into the subject of another paper being delivered at this conference, so I shall not pursue these thoughts further here.

WRAP-UP

1 The financing technique now in use in Ontario is not suited to present conditions. It stands in the way of changes that are academically desirable, are needed by society, and are demanded by government.

2 Government, both in Ontario and in the other provinces, is responding to this unsatisfactory situation not by changing the financing technique but by seeking desired changes through the imposition of external administrative controls on the universities.

3 By redesigning the financing technique, governments could avoid (as they appear to wish to do) a 'hands-on' approach to the management of university systems. This would be better for government, better for the universities, and most importantly better for the students and for society at large, which universities exist to serve.

4 It will be difficult to accomplish this, since any financing technique is a combination of several funding mechanisms that are put in place in Canada by two orders of government. Good federal-provincial coordination will be required.

5 The way to proceed is by making incremental changes in the present financing technique, rather than by scrapping it in favour of something new. In particular, it is possible to change the relative

importance of existing funding mechanisms, and to modify their design. The result, over a longer period, could be very significant.

6 Reforms should focus on remedying the deficiencies arising from the present rules for allocating the provincial operating grant. The grant is allocated mainly on the basis of the enrolment patterns of the mid-1970s; it has deliberately been made quite insensitive to changes in enrolments. This – given the central place of the operating grant in the overall financing technique – offers the universities very little incentive to maintain or raise standards of performance, particularly in undergraduate teaching.

7 One way to resolve this problem would be to make the grant again more sensitive to changes in enrolment. This, however, might have the effect of unduly rewarding growth. If this is thought to be the case, then more emphasis must be placed on other sources of funding – fees and research support. However, if fees were to rise substantially, this could be done only in conjunction with more generous student-aid policies, if access to university were not to be severely restricted.

8 If more emphasis were placed on student aid and on research support as aspects of an overall financing technique, a possible but not necessary consequence would be to increase the role of the federal government in relation to universities. Some of the money now transferred to the provincial governments might be used to expand federal activities in both these areas. This would have very substantial advantages, particularly in diminishing the extent to which the universities of individual provinces tend to form self-contained systems. On the other hand, there are dangers in it too, since the provinces have primary responsibility in the whole field of education. The needed reforms would have to be introduced co-operatively by the two orders of government.

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Comments

John Graham

Introduction

I am not going to comment on Peter Leslie's excellent paper. It is a thorough, subtle, sensitive, and suitably pragmatic treatment of this difficult subject. You do not need me to tell you how good it is or to raise questions about it. I quite agree with him that funding necessarily has a number of elements and that much of the problem is to determine what the weighting of those elements should be. I do question his urging that any changes be seen as experimental and incremental. I would favour developing clearly defined principles and proceeding with a definite declared program to implement those principles. Perhaps, however, in the end, we are not far apart; for I concede that it may be necessary to phase in a new arrangement and I would certainly not favour continuing with the implementation of a new program if experience in the early stages proved it to be undesirable.

In making these comments, I am using extensively a paper prepared for an earlier Ontario Economic Council conference on federal-provincial relations.[1] I am going to make a specific proposal, one that I believe incorporates a more rational approach to funding than what now is taken and that may have particular appeal now that public funding has levelled off. This proposal is a combination of some of the elements contained in Peter Leslie's paper.

Before doing so, however, I want to express my disquiet at what seems to be a wide acceptance of the view that whatever the universi-

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ties are doing is fine and good and that their only real problem is that they are underfunded.

In discussing the funding of anything it is always salutary to ask what is it we want to fund and why. Unless that nettle is grasped there is no clear basis for policy. There seems to be a great reluctance to consider that question. One can only conclude, in the absence of much discussion to the contrary, that the present state of the university as a supermarket – as another service industry – is considered acceptable, even desirable. According to this view, universities should strive to get money for whatever they can get it for, and whatever they choose to do should be adequately funded.

Within this view, the student body is regarded as a client base which the university must develop in order to maintain the system. The participation rate is seen as an instrument for increasing enrolment, rather than an as outcome of a decision to admit and retain only those students who have the capacity and interest to engage in studies at a high university standard. Greater accessibility is also looked on as a policy meant to increase enrolment indiscriminately, rather than as one meant to ensure that those students with the ability and interest can go to universities without being restricted by their economic status. In all this, the survival of the institutions and of the faculty, rather than the establishment and attainment of defensible educational purposes, appears to be the principal objective. This observation supports the contention of the rapporteur of this conference, Bernard Shapiro, that we the faculty are among the principal beneficiaries of our universities.

Having now got themselves into this situation of producing products for the government and for the marketplace, the universities are in real danger of losing control of what they do and of simply responding to whatever they think governments want them to do and are prepared to give money for. Their recent emphasis on providing research and highly trained manpower specifically to meet the country's needs for a high-technology economy should give rise to grave misgivings about the possibility that university scholars and researchers engaged in fundamental, theoretical studies could soon turn into technocrats.

This is not to say that scholars and students in the universities should not be concerned about the real world. That is exactly what they should be concerned about. Theory is only of value if it is concerned with practice – with understanding the world as it is and as it ought to be. But the unique and most effective contribution the universities can make is their examination of science and society and humanity from carefully considered theoretical principles, through continuous disciplined study.

Only if the universities have the support they need for fundamental research and study and for serious academic instruction can they perform their essential academic functions. Only then can they also make their most effective contributions to public issues and to economic and social development.

It is, I believe, this latter conception of the universities' place that provides their strongest claim to support and on which I think they should stand their ground. However, they have probably already gone too far in becoming vocational institutes and in seeing themselves in that way to make any reversal possible or likely.

Having briefly expressed concern about the general failure to examine the structure and funding of universities in relation to the fundamental questions of the desirable purposes and functions of universities, I now turn to a specific proposal for funding. But before doing so, it is important to note that in the search for a rational and practicable system of funding, we should not expect the system of funding in itself to ensure that universities will do what they should do. It can, however, encourage them to move in desired directions.

The funding proposal

The aim of this proposal is to devise a system of funding that will enable and encourage the universities to concentrate on and strengthen their essential functions, that will apportion the costs equitably between the individuals who receive private benefits and the public who receive social benefits, and that will, at the same time, facilitate access of students to university in accordance with capacity and interest and not with economic status.

There are some respects in which society as a whole benefits from work done in universities and other respects in which the students themselves are the principal beneficiaries. In the case of academic instructional programs, there is little doubt that the students are the principal beneficiaries. They, not the general public, are the ones who benefit both from the general satisfaction of being more highly educated and from the greater economic rewards of such education.

There is *some* social benefit, to be sure, from having a select part of the population that is highly educated (a small proportion even of university graduates), but it is important not to exaggerate that benefit.

In the case of research and related study – activities also central to a university's responsibility – there is a much larger element of social benefit in relation to private benefit, although, even here, much of what passes for research in universities today is of questionable value to anybody.

This line of reasoning suggests a principle of funding whereby the individual student or the public contributes to the funding of universities depending on whether the benefit is private or social. It is an approach that is also firmly rooted in public-goods theory. As will be seen, it can be and in my view should be adopted. I believe it would lead to a more responsible and defensible arrangement that would give the federal government the greater recognition it understandably wants for its contribution to the funding of postsecondary education, yet without undermining legitimate university autonomy or infringing upon provincial jurisdiction over education.

The following is a brief sketch of some of the elements of this approach to university funding and indeed to the funding of postsecondary institutions in general:

– Since students are the principal beneficiaries of university education, the bulk of teaching and instructional costs for all programs should be reflected in their fees. Making those who benefit face the costs would have the further advantage of making students recognize that their decision of whether or not to attend university is a serious one. Like marriage, it is not to be entered into lightly. This proposal also has the virtue of making the full and true costs of a university education more visible.

– Access to universities should be based upon the ability and interest of students to engage in university studies and *not* on the economic status, i.e., the incomes of students or their families. This requires that there be a system of loans and grants (bursaries) to students so designed that low-income students can attend university without accumulating debt greater than that of students of average means. Loans should be interest-free until the students complete their studies and for a period thereafter. The grants and the interest-free provision for loans would mean a quite substantial public subsidy that would recognize that there is some general social benefit as well as private benefit from such students receiving a university education.

– Since research by faculty members confers a substantial amount of social benefit, the costs of such research should not be covered by student fees but by block grants of public funds. The grants should be based not upon enrolment levels, but upon the demonstrated requirements of universities for performing the research.

The amount of funding to be provided should be made known, with a reasonable degree of certainty, several years ahead, and be made contingent upon the universities' participating in an agreed planning process and their providing satisfactorily for internal and external accountability in their use of funds.

Incidentally, equality of access of competent students to university should not be confused with the social goal of reducing economic inequality: it is very doubtful that educational policy is an effective means to achieve that goal. All we can hope for is equality of access for those who have the ability and interest to engage in university studies.

While these are the main elements of the proposal, there are some qualifications that I think should be made to it.

– The *very ablest* students should be generously supported by scholarships, since there is a large probability of social benefit arising from *their* education at the university level. Such a policy also underlines and gives substance to the universities' commitment to academic excellence. This policy is, however, sometimes criticized on the basis of its giving an additional bonus to those who are already gratuitously endowed with brains. This is to overlook both the social benefit from ensuring that the intellectual abilities of our ablest people are fully developed and the fact that the ablest students are also generally the ones who work the hardest. They have demonstrated that they are prepared to discharge their responsibilities in the university community. Their abilities are by no means unearned.

– In the first year of university, a substantial part of the assistance could be in the form of grants, since for many first-year students, university is an experiment which may or may not be successful, and too large a debt load at this stage may discourage many of the potentially successful ones from attending, particularly those from low-income families. At the same time, the students could be required to pay a significant share of the cost with the assistance of loans in order to help ensure that their decision to undertake work at a university standard is a well-considered one and so that they have a personal stake in ensuring that their year is well spent.

– A contingency repayment scheme is an important possible variant of this proposal. In an attempt to meet the concern that future earnings of university graduates may not turn out to be sufficient to have warranted their investment in their education, the proposal has been made that repayment of the costs advanced to students by governments be contingent on the size of their incomes after leaving university and that supplementary taxes be imposed that vary with those incomes. It is argued that this method of contingent repayment is less likely to discourage students of low-income families from attending university, for there is then no debt burden that they have to pay when they cannot afford to. Only those whose future incomes were above a given and relatively high level, whether they are from high- or low-income families, would have to pay. It is important to note here that future income may not in fact be determined to any appreciable extent by the recipient's university education, except in some cases, particularly in professions like medicine and law for example, where it is likely to be a result of a combination of professional education and restrictive licensing linked to that education.

The benefits flowing to the individual from a university education are not, however, limited to possible increased earnings. There is also the direct satisfaction involved in pursuing an education and, possibly, the opportunity of more congenial employment and of having a more interesting life. Thus, it is reasonable to expect the student to accept outright responsibility for some substantial share of the cost of his or her education by way of a firm commitment to repay some of the loans.

Whether the provisions require the outright and full repayment of loans or their contingent repayment, a large part of the funding would be recoverable by government and therefore would ultimately be self-financing.

The contributions of governments in the form of loans, bursaries, and scholarships paid to students would be highly visible, as would grants made to universities for research and for capital purposes. With fees set to reflect full instructional costs, the students would be the conduits through which universities would receive much of their public funding. And, since greater support would be given to low-income students than to high-income students, governments would no longer be in the position of subsidizing the education of the well-to-do through taxes levied on the general public, including the relatively poor, as is now the case, where all students benefit equally from the general public funding although the bulk of the students are from upper-income families. Overall, then, a greater share of costs would be met privately.

Observations and comments on the funding proposal

I shall conclude with the following observations and comments:

1 Funding by the means proposed would have to include funding for the maintenance of students as well as for fees and might mean some alterations in student-aid programs.

2 One principle underlying the proposal is that it will exact a larger private contribution from the student beneficiary who can afford to pay, while ensuring that no one who cannot pay yet has the ability and interest to attend university will be denied that opportunity. It therefore has appeal to conservatives, liberals, and social democrats alike. Moreover, the autonomy of the universities in each province to determine their programs need not be affected.

3 The proposal has the considerable virtue in a time of constrained public funding of tilting the source of funding from public to private funding and so possibly of increasing the total funding available to universities.

4 It is obvious that this proposal could not be adopted unilaterally in a single small province. It may have to be adopted simultaneously throughout the country, with federal-provincial agreement, although possibly a large province like Ontario could consider unilateral adoption. Moreover, it might have to be phased in over several years.

5 If funding of universities were to be in the form suggested, a major

problem would be to reach federal-provincial agreement as to the apportionment of funding of bursaries, loans, and scholarships between the two levels of government so that it would be clear to the student recipient and to the public what federal and provincial governments, respectively, were contributing. Likewise, there would have to be agreement on which government is to hold responsibility for funding research and capital expenditures. Possibly the federal government could pay for the scholarships and block funding of research, since the benefits would be widely distributed throughout the country and therefore common to all provinces. The provinces could pay for bursaries and capital costs. However, this scheme would still leave the problem of apportioning the responsibility for loans.

6 As already mentioned, there has been some discussion of and speculation about the possibility that the federal and provincial governments, as part of their manpower policies might redirect some of their funding into particular programs in universities in order to train people in areas in which technical-manpower shortages are predicted otherwise to occur. Such a move would be ill-advised. The universities have already gone much too far in the direction of vocational training. It would turn university faculty members, even more than they already are, into technocrats, rather than sustain their essential university functions as scholars and researchers engaged in fundamental theoretical studies. Moreover, with the notorious inaccuracy of predictions of manpower needs, there would likely be hoards of misled and disappointed students howling at the governments' doors when the predicted jobs did not materialize. It is far better to provide the best information available and to leave it to students to make their own decisions about their programs.

As indicated above, I am well aware that the proposal leaves some questions not fully answered. My purpose here is not to attempt to touch all bases, but to try to establish principles that might lead to a more satisfactory way of funding universities.

Finally, I must emphasize that it is not a new proposal, either in my own thinking or in that of others. Variants of it have been under discussion across Canada for at least ten years. But it may be an idea for funding whose time has come, in view of the present difficulties in which universities and governments find themselves.

NOTE

1 See Graham, John (1985) 'Funding of universities in Canada'. In D.W. Conklin, G.C.A. Cook, and T.J. Courchene, eds *Ottawa and the Provinces: The Distribution of Money and Power* (Toronto: Ontario Economic Council) 1:323-334

The capital funding of Ontario universities: what should be done?

Kevin Dowd

AN HISTORICAL OVERVIEW

From Confederation until the early 1960s, the capital funding of Ontario universities was a matter usually left to the universities themselves. The province's policy on university capital, such as it was, was to consider each application for assistance on a case-by-case basis. However, the early 1960s saw a rapid growth of the university system and of government transfers to it. As these transfers grew, there was increasing pressure for the adoption of an objective measure to determine the magnitude and distribution of capital transfers. This pressure led to the introduction of a capital-funding formula in July 1964. The formula specified five categories of projects and the appropriate level of provincial support to each. The formula was subsequently modified in March 1968 to raise the support level and include athletic facilities.

In the meantime, there was increasing concern about the equity of the formula and how best to account for universities' capital needs. Part of the problem was the lack of an adequate inventory of university space. To overcome this problem, the Ontario Universities Physical Resources Study (OUPRS) was commissioned in late 1967. Its mandate was to compile an inventory of university space, to collect data on its utilization and to recommend space and utilization standards.

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It was initially hoped that the study would be completed in one or two years. When it became clear that it would not, the government decided on a stop-gap reform of the formula until the study was complete. The result was the Interim Capital Formula (April 1969). This formula made allowances for each full-time student and for new buildings fully furnished and equipped. Each new project had to be approved by the Ministry of Colleges and Universities.

The formula was later modified to provide increased allowances for part-time students and to introduce an age-quality discount for university space. The purpose of this discount was to make allowance for the fact that older buildings are usually more costly to use and maintain than newer ones. The formula was also modified to account for 'cyclic renewal'. This refers to the cost of alteration and depreciation and the obsolescence of the capital stock. The calculation of the cyclic-renewal allowance was somewhat complicated, but it boiled down to about 1 per cent of the value of the physical plant.

Before the OUPRS study was completed, the province abruptly changed tack and suspended the Interim Capital Formula in November 1972. No replacement formula was adopted and it gradually became apparent that a 'capital freeze' had been imposed. Each university was required to submit a list of capital requests to the Ministry. The Ministry would then use its own discretion to determine which requests should be approved. It became clear that very few new projects would be allowed to go ahead, and that the funding for other forms of capital expenditure would be considerably reduced. Further, though the 'capital freeze' was initially seen as a temporary measure which would be lifted in due course, there has in fact been no new formula and the freeze is still in effect after twelve years.

CAPITAL FUNDING: SOME BASIC FACTS

To put the capital-funding issue into perspective, it helps to review some basic facts. To begin with, we want to get some idea of the demands which were placed on university capital over the past decade or so. One indication of these demands is the number of full-time equivalent (FTE) enrolments in Ontario universities. Data on these are presented in Table 1. These data indicate a continuous and rapid expansion of FTE enrolment throughout the period: from 43.4 thousand in 1962/3 to 153.1 thousand in 1972/3, the year the capital

TABLE 1
Full-time equivalent (FTE) enrolment at Ontario universities, 1962/3 to 1982/3

	FTE total[a] (000s)		FTE total[a] (000s)
1962/3	43.4	1973/4	161.5
1963/4	49.5	1974/5	168.7
1964/5	57.0	1975/6	180.2
1965/6	65.9	1976/7	184.0
1966/7	77.3	1977/8	181.0
1967/8	88.9	1978/9	176.5
1968/9	104.2	1979/80	177.9
1969/70	116.4	1980/1	190.4
1970/1	132.8	1981/2	197.3
1971/2	142.8	1982/3	207.2
1972/3	153.1		

[a] Prepared by adding full-time and converted part-time (3 part-time = 1 full-time) enrolment together.
SOURCE: The Royal Commission on the Future Development of the Universities of Ontario (1984) Part 1, Table 1 (based on Statistics Canada data).

freeze was imposed. FTE enrolments continued to grow thereafter, albeit at a slower rate. They grew to 207.2 thousand in 1982/3, an increase of about 25 per cent since the imposition of the freeze.

A second source of increased demand on university capital is research. Data on the amount of sponsored-research done at Ontario universities are given in Table 2. On a constant-dollar index, sponsored-research revenue has grown by 55 per cent since 1972/3.

A third source of increased demand for university capital is its advancing age. In its brief to the Bovey Commission, the Council of Ontario Universities (COU) say that in 1975/6 more than 60 per cent of university space was less than 10 years old. By 1983/4 this proportion had fallen to less than 14 per cent. Meanwhile the 14 per cent of universities' plant that was 20 years old or more had increased to more than 27 per cent. It goes on to say:

> Evidence suggests that operating costs of physical plant increase significantly with age. Total operating costs per year (for privately owned office buildings in major Canadian cities) were about 50 per cent greater for buildings 20 to 29 years old

TABLE 2
Sponsored-research revenue, 197/1 to 1982/3

	Constant-dollar index		Constant-dollar index
1972/3	100.0	1978/9	117.3
1973/4	99.6	1979/80	125.5
1974/5	102.0	1980/1	131.3
1975/6	102.9	1981/2	154.4
1976/7	103.4	1982/3	155.2
1977/8	113.7		

SOURCE: Council of Ontario Universities (1984) Appendix E, p. E-17.

> then they were for buildings less than 10 years old. The disparity between relatively new and old buildings is greatest for the costs of building repairs and maintenance. The Building Owners and Managers Association data suggest that a building over 20 years old will have repair and maintenance expenses more than double those of a building less than 10 years old. In addition, cleaning, utilities, and security all will be more costly for older buildings. (COU 1984, p. E-8)

There have therefore been at least three major sources of increased demand on university capital since the imposition of the capital freeze – a substantial increase in student enrolments, an even bigger increase in research activity, and a considerable ageing of the capital stock. To these three factors should be added a fourth which, though unquantifiable, is probably very significant – the obsolescence of the capital stock. This obsolescence can arise from a number of sources. For example, changes in the price of energy such as occurred over the 1970s can significantly affect the relative value of energy-intensive plant and especially that geared to the use of oil. Changing student-enrolment patterns can also influence the relative values of capital items like small and large classrooms, language laboratories, computer facilities, and so on.

All these factors set a background against which we can evaluate the actual capital funding the universities received. An indication of this funding is given in Table 3.

These figures are striking. They indicate that in real terms capital grants to Ontario universities fell from almost $99 million (in 1972/3 dollars) to less than $10 million in 1983/4. *In other words, over a period when demands on the capital stock rose very substantially, the capital funding of Ontario universities fell to a tenth of its previous value.*[1]

Capital expenditures

To get some idea of the relative squeeze on capital expenditures, consider Table 4, which shows capital expenditures as a proportion of total expenditures for both Ontario and Canada. These figures indicate a period of rapid capital expansion in Ontario universities in the mid-1960s. After peaking at 42.5 per cent in 1965/6, the ratio of capital to total expenditures falls to about 20 per cent in 1971/2 and to 4 per cent in 1976/7. It has basically remained at that percentage ever since. For Canada, on average one sees the same high percentages in the 1960s, but a much less dramatic fall. The average for Canada as a whole is about 7 per cent over the past 8 years, compared with the Ontario average of about 4 per cent. What these figures therefore tell us is that while the proportion of capital to total expenditures has declined quite considerably for Canada as a whole since the 1960s, the decline has been much more pronounced in Ontario: indeed, for the past eight years or so the proportion for Ontario has been about half that for the rest of Canada.

An important part of the capital budget is expenditures on equipment and furniture. Consider the data presented in Table 5. These figures indicate that, in terms of constant dollars (see last column), equipment and furniture purchases by universities fell by about 60 per cent between 1972/3 and 1980/1. They also indicate that an increasing proportion of that expenditure was covered by operating funds instead of capital funds. The decline in the proportion covered by capital funds is in fact very dramatic, falling from about 58 per cent in 1972/3 to only 6 per cent in 1980/1. These figures indicate that universities have increasingly used their operating budgets to try to maintain their equipment purchases. Even so, these purchases have still declined to about 40 per cent of their 1972/3 level.

Another capital-expenditure item is maintenance. Data on maintenance expenditures are given in Table 6. Consider first the data for Ontario. These data indicate that maintenance expenditures are a

TABLE 3
Capital grants to Ontario universities, 1972/3 to 1983/4

	Constant (1972/3) dollars		Constant (1972/3) dollars
1972/3	98,712	1978/9	10,365
1973/4	50,079	1979/80	10,618
1974/5	17,840	1980/1	10,074
1975/6	15,627	1981/2	9,921
1976/7	12,372	1982/3	11,790
1977/8	16,863	1983/4	9,723

SOURCE: COU (1984), p. E-18.

TABLE 4
Capital expenditures as a percentage of total expenditure: Ontario and Canada, 1960/1 to 1982/3

	Ontario	Canada		Ontario	Canada
1960/1	36.1	30.4	1972/3	15.4	14.3
1961/2	31.8	28.7	1973/4	15.2	12.4
1962/3	29.8	31.6	1974/5	6.4	9.1
1963/4	35.6	33.5	1975/6	4.7	9.0
1964/5	40.5	38.7	1976/7	3.6	6.0
1965/6	42.5	36.8	1977/8	4.6	7.0
1966/7	39.9	35.8	1978/9	2.8	7.2
1967/8	34.6	33.6	1979/80	2.3	7.2
1968/9	32.7	27.3	1980/1	4.0	7.3
1969/70	28.7	24.7	1981/2	2.9	6.8
1970/1	27.1	24.3	1982/3	4.0	7.5
1971/2	19.1	18.8			

SOURCES: 1981/2 and 1982/3 data is unpublished information received from Education Finance Sector of Statistics Canada.
1980/1 data is from Statistics Canada (1981a), Table 5.
Data for the seventies is from Statistics Canada (1981b), Table 8.
Data for the sixties is from Statistics Canada (1981c), Table 31.

roughly stable proportion of total expenditures (varying between 6 and 12 per cent). As a proportion of the capital budget, however, they have varied dramatically: in the expansionary period of the 1960s

TABLE 5
Total equipment and furniture purchases by fund

	Operating fund	Capital fund	Total purchases ($000s)	Constant (1972/3) dollars
1972/3	42.2	57.8	24,959	24,959
1973/4	42.5	57.5	24,846	23,528
1974/5	65.4	34.6	18,468	15,213
1975/6	74.8	25.2	18,287	13,566
1976/7	87.6	12.4	15,644	11,142
1977/8	80.6	19.4	19,088	12,089
1978/9	84.1	15.9	20,085	11,373
1979/80	86.9	13.1	20,689	10,593
1980/1	94.0	6.0	22,163	10,024

SOURCE: COU(1982), p. 33.

maintenance expenditures accounted for less than a quarter of capital expenditures, but when the freeze was imposed that proportion rose very quickly. Since 1975/6 it always has been well over 200 per cent, and in some years it was over 400 per cent. These figures therefore give another indication of the extent to which capital funds have been squeezed by the provincial government.

A comparison with the statistics for Canada as a whole is also illuminating. On average, Canadian universities show the same low maintenance-expenditures to capital-budget ratios in the 1960s, but the subsequent rise in the 1970s is far less pronounced. The average percentage since 1975/6 is about 135, which compares to an Ontario percentage of easily 300. Thus the squeeze on Ontario-university capital funds is very severe, not only in absolute terms, but also relative to Canada as a whole.

Yet another item of capital expenditure is library acquisitions. Table 7 presents indices of library acquisitions in constant dollars and constant dollars per FTE student. Library acquisitions show virtually the same pattern as other capital items. In real terms, expenditures on library acquisitions declined by 35 per cent from 1970/1 to 1980/1, while the decline per FTE graduate was 55 per cent. These declines took place over a period when the volume of scholarly publications grew by 20 per cent, and when the extreme rise in the price of perio-

TABLE 6
University-plant maintenance expenditures as a percentage of capital and total expenditures in Ontario and Canada, 1960/1 to 1982/3

	Ontario		Canada	
	% of capital expenditures	% of total expenditures	% of capital expenditures	% of total expenditures
1960/1	19.5	7.0	25.7	7.8
1961/2	25.9	8.2	30.3	8.7
1962/3	26.7	8.0	25.3	8.0
1963/4	19.7	7.0	22.3	7.5
1964/5	15.6	6.3	16.4	6.3
1965/6	13.5	5.7	17.5	6.4
1966/7	14.9	5.9	18.3	6.5
1967/8	19.1	6.6	19.8	6.6
1968/9	20.8	6.8	26.4	7.2
1969/70	25.9	7.4	27.8	6.8
1970/1	30.1	8.1	32.1	7.8
1971/2	48.1	9.2	47.6	8.9
1972/3	66.1	10.2	69.2	9.9
1973/4	69.2	10.4	84.3	10.5
1974/5	176.1	11.2	115.1	10.7
1975/6	413.4	11.4	122.4	11.0
1976/7	332.9	11.8	193.0	11.6
1977/8	255.5	11.7	160.7	11.3
1978/9	415.3	11.5	152.4	10.9
1979/80	486.7	11.3	148.7	10.7
1980/1	280.1	11.1	142.9	10.5
1981/2	379.6	10.9	152.2	10.3
1982/3	264.0	10.4	132.0	9.9

SOURCES: See Table 4.

dicals put even more pressure on monograph purchases (COU 1982, pp. 30-1).

All these statistics indicate a very severe tightening on capital expenditures. To complete the picture, one should also look at expenditures on renovations and alterations, and new capital projects. In 1970/1 Ontario universities spent about $7 million on renovations and alterations. In constant dollars, the figure for 1980/1 was pretty much the same. However, this figure still represented a considerable fall per FTE student, and indicates that no allowance was made for factors

TABLE 7
Index of expenditure on library acquisitions

	Constant dollars	Constant dollars per FTE
1970/1	100.0	100.0
1972/3	93.8	82.8
1974/5	85.3	67.2
1976/7	75.9	53.9
1978/9	64.6	48.4
1980/1	64.9	46.4
1981/2	61.7	42.1

SOURCE: COU(1983), p. 30.

such as the effects of the aging capital stock (COU 1982, p. 35). As for new capital projects, these have been virtually non-existent since the capital freeze was imposed.

There have therefore been a number of increased demands on the universities' capital stock – more students, more research activity, and the ageing and obsolescence of the physical plant – and yet against these incurred demands actual capital funding was slashed to a *tenth* of its value when the capital freeze was imposed. Even if the capital stock was over-extended back in the early 1970s, and it may well have been, it seems hard to avoid the conclusion that current capital funding is inadequate, and perhaps chronically so.

THE SEARCH FOR AN OPTIMAL CAPITAL FORMULA

The use of some kind of formula to allocate capital funds has a number of advantages over a nonformula or discretionary approach. By making explicit the criteria governing capital finance, it helps universities to predict their capital revenues and makes financial planning that much easier. Making the allocation criteria explicit also helps to reduce suspicions that some universities might be treated inequitably. But perhaps the main argument for adopting an explicit formula is that although even in a discretionary system some set of principles will come to govern capital allocation, without a formula those principles will often be adopted unconsciously, and therefore without proper forethought, and will tend to include a large random component which will make universities' capital planning much more difficult. The idea that projects can be *evaluated* on a case-by-case basis *without any guiding criteria* is a contradiction in terms. The only question is whether those criteria are to be good ones or not. If they are, then they ought to be spelled out, and *that is exactly what a formula does.*

There is, however, a very practical objection to the capital-funding procedures currently used by the Ministry of Colleges and Universities. At the moment each university submits a list of capital projects in which different projects are prioritized. The Ministry will then assess each project on a case-by-case basis. Current capital-funding arrangements therefore require two sets of bureaucracies to deal with each other: a government bureaucracy on the one hand to evaluate the projects submitted to it, and university bureaucracies on the other to prepare and defend the submissions.

It is far from clear just why one needs such an administration: why doesn't the Ministry simply tell each university what its capital allowance is and let the universities decide their own relative priorities? The present vetting of each capital project could then be dispensed with. The existence of this vetting procedure is even more difficult to defend when one looks at how little money there is to be allocated: in 1984/5, the capital grants to be allotted to the whole university system are only about $10 million.[2]

The question is, therefore, not whether there should be a formula or not, but instead what form it should take. One approach is to attempt to assess 'capital needs' on the basis of an evaluation of the current capital stock. The assumption underlying this approach is that 'capital needs' are proportionate to some measure of the capital stock.

To implement this approach, one needs at the very least a detailed inventory of the universities' capital stock. This was the motivation behind the previously mentioned OUPRS study commissioned in 1967 and the COU's 'building blocks' surveys of university capital which started in the early 1970s. A straight space-inventory is not enough, however, because the value of the space will vary from one building to another.

One source of these value-differences will be the different age of buildings. One can see from Table 8 how the average age of buildings varies across different universities. This table indicates that in 1981 Brock had the youngest buildings with an average age of less than 11 years while Toronto had the oldest with an average age of more than

TABLE 8
Average age of Ontario-university space, excluding rentals (1980/1)

Institution	Average age
Brock	10.55
Carleton	13.14
Guelph	20.44
Lakehead	13.16
Laurentian	11.91
McMaster	14.35
Ottawa	24.85
Queen's	16.26
Toronto	25.33
Erindale	9.35
Scarborough	9.44
Trent	14.58
Waterloo	12.74
Western	14.76
WLU	11.95
Windsor	15.90
York	11.42
Glendon	20.34
Ryerson	13.23
OCA	25.05
All Ontario	17.02

SOURCE: COU(1981), p. 8.

25 years. One can also see from the table that these universities are not outliers. The average age of university buildings therefore varies quite considerably from one university to another. Older buildings will generally be less valuable because of higher maintenance and repair costs, and because the purposes for which they were built will usually be less relevant to current needs.

Besides age there will be many other factors which will affect the relative value of university buildings. The relative price of land will be one: one would expect that any given building at the University of Toronto will be considerably more valuable than a comparable building at, say, the University of Western Ontario, simply because the price of land is that much higher in downtown Toronto than in London. Another factor that will change the relative value of buildings is changing student-enrolment patterns. A shift towards computer science away from modern languages will increase the relative value of facilities suited to computer science, and decrease the relative value of facilities such as language laboratories. The changing price of oil must also have had a considerable impact on the values of certain types of university capital. Energy-intensive facilities would have declined in value as the oil price rose, especially those fitted for the use of oil rather than other forms of energy.

It might then seem that if one could devise a formula that accounted for all these factors one could then determine the value of the capital stock. Unfortunately this is not really so: the only way to assess the value of universities' capital stock is to assess the value of each individual item, and each individual item can only be assessed by its market value. That is not a problem for many types of equipment for which well-developed rental markets exist; the problem, however, is that for many capital items such markets do not exist, or if they do they are very imperfect. How can we assess the value of lecture theatres and classrooms in the absence of a rental market? But unless one can work out some implicit market rental for these items the value of the capital stock cannot, in principle, be assessed. However sophisticated the formula and inventory assessment used, evaluating the capital stock on the basis of some inventory formula can at most deliver a very imperfect approximation to the value of the capital stock, and we have no way of knowing how imperfect an approximation it is.

But even if we could be sure that the approximation thus obtained was a reasonably good one, there is a deeper problem with the 'capital needs' approach. That problem concerns the very idea of 'needs' itself. To speak of 'needs' implies a fixed capital requirement independent of many economic and other factors which must be relevant. As any economist knows, 'needs' as such don't exist; what do exist are *demands*, that which take into account factors, such as relative prices, ignored by the concept of 'needs'. *To ask what university capital 'needs' are is to ask the wrong question.* We should be asking what the relative demands are. The basic problem of capital funding is not – or ought not – to be to figure out what is 'needed', but rather to assess relative demands for capital with a view to investing it where it is most useful.

Viewed from this perspective the whole problem is quite different. There is no longer any need to assess the value of the capital stock.

The urgency of detailed university space-inventories and the like disappears, and one can avoid all the problems of tinkering with estimates of a capital stock that can never properly be assessed. The problem is instead to assess the relative demands for university capital. Demands for capital come from students, faculty, support staff, and the amount of research done. Thus one could adopt some sort of capital-funding formula which attaches some weight to each of these factors. Suppose, however, that the number of faculty and support staff, and even the amount of research done, all depend ultimately on the number of students a university can attract. In that case one might want to adopt a formula based purely on student enrolments. Such a formula would be simple and easy to implement, and would allocate capital funds to where they were most needed.

It is important to note the basic difference between a capital formula based on some estimate of university capital, on the one hand, and a demand-based formula, on the other. Suppose for the sake of argument that the capital funds to be allocated are fixed, so that the role of the formula is purely allocative. The first type of formula would tend to allocate funds in accordance with the existing capital stock. The focus of this type of formula is therefore historic in nature: those universities with greater capital endowments get more money for capital expenditures; those with smaller endowments get less. This approach therefore tends to reinforce the status quo. On the other hand, a demand-based formula such as the one based on enrolments will tend to channel relatively more money to those universities with the greater enrolments. This is presumably where it is most needed. Not only that, but it tends to promote flexibility among universities by not attempting to maintain the existing distribution of capital. A 'demand-led' formula such as the enrolments formula would therefore appear to be clearly superior to an 'historical capital needs' approach to allocating capital funds.

CAPITAL AND OPERATING FUNDS

One of the most important features of the current arrangements for government transfers to universities is the distinction between capital and operating funds. Under the present arrangements, the funds transferred under the capital fund are not just an allowance for capital expenditure which the universities can spend for other purposes if they wish. These funds are intended for capital projects. Similarly, funds transferred as operating grants are meant to be spent on operating the universities, and not on capital. This is not to deny that there can be a certain amount of substitution between the two funds for certain purposes. Indeed, the evidence looked at earlier suggests that a certain amount of substitution has taken place. For example, Table 5 indicates that expenditures on furniture and equipment came to be financed increasingly from the operating fund as the squeeze on the capital fund became tighter. The essential point, however, is not whether this sort of substitution takes place or not, but instead that it is imperfect, and that the way the government divides up its transfers between capital and operating grants will influence the way the funds are actually spent.

A sound economic principle is that the more discretion a transfer recipient has over how he spends his transfers, the better off he is. The main exception to this is when the recipients are not capable of making rational expenditure decisions, or at least are less capable than the donor. This argument is often made in the context of welfare payments, and is used to justify programs like food stamps, housing allowances, and so on, in preference to outright cash transfers. This sort of argument for tied transfers would hardly seem applicable to university finance, however. To apply it to universities would imply that Ministry officials have a better grasp of each university's priorities than, say, the university presidents, and that seems to be very implausible.

It therefore appears that university finance is not an exception to the general rule that untied transfers are better. Should we therefore conclude that the government should give up attempting to direct universities' expenditures in this way, and instead make 'allowances' to the universities which they can spend as they please? I would argue strongly that we should. The government's responsibility is to provide for the universities overall, and not for particular items as such. The government also has a responsibility to ensure that its funds are allocated where they are most needed. The universities themselves would appear to be the best judges of their priorities. If this is true then the attempt to influence how universities spend their money will tend, precisely to the extent that it is successful, *to direct resources away from where they are best used.* The government's responsibility to ensure that its transfers are properly allocated therefore implies not that the government itself should try to influence how those funds are spent, but that it shouldn't. As regards funding, therefore, the appropriate role of the government is to determine the overall funding levels of each university. The universities then should be allowed to spend that money as they think fit.

Thus the economics of the situation strongly suggest that the government should disentangle itself from universities' capital-finance decisions. One can also mount a very strong political argument to the same effect. That argument revolves around the current 'crisis' in university capital funding and the government's responsibility for it. It appears that the capital budgets of Ontario universities are severely, and perhaps chronically, underfunded. The situation is bad and as time goes on it is gradually getting worse. At the same time the government has adopted a very direct interventionist policy on capital funding. In following such a policy the government has in effect accepted total responsibility for the capital situation. They then have no defence when they get criticized for it. *The government is therefore in a very vulnerable political position. As time passes, its vulnerability increases.* The advantage of the government disentangling itself from capital decisions is that it can then claim that they are a university responsibility, and that the government's responsibility is simply to ensure that overall funding levels are adequate. *Once capital investment is made a university responsibility, the government gets off an awkward political hook.* Whenever a university complains of a capital shortage then the government can simply invite it to revise its priorities and spend more on capital and less on something else. The dialogue would then focus on whether the overall funding levels were adequate or not, and that is exactly where the focus should be. If the government decided on such a policy the universities would have no alternative but to accept it, and indeed the government can argue that they are only giving the universities the autonomy and discretion they have always wanted.

SOME CONCLUSIONS AND RECOMMENDATIONS

After the rapid expansion of the Ontario-university system in the 1960s, there has been a dramatic squeeze in provincial transfers to universities, and especially in their capital funding. Even allowing for the possibility that the university system over-expanded in the 1960s, and that there was therefore some need for retrenchment, it seems hard to justify the current capital allowance of about $10 million a year for a capital stock valued at about $3.5 billion (COU 1984:E-8). In any case, increases in student enrolments and in faculty research activity, and the advancing age of physical plant, have all tended to increase demands on the capital stock. There is therefore a very strong case to be made that university capital budgets are being severely underfunded.

There are also major problems with the way capital funds are distributed. The current procedure is not only arbitrary and unpredictable, but also costly to operate. I would therefore recommend the adoption of a simple formula to determine the allocation of capital transfers. The question is then what form that should take. The choice is between an 'historic' approach, which attempts to estimate 'capital needs' from an estimate of the pre-existing capital stock, or an allocative mechanism which channels capital funds to where they are in most demand. The latter approach is clearly superior. In dispensing with any need for an estimate of the existing capital stock it would also be easier to implement. I would therefore recommend that the capital formula be based on some notion of the demands for capital. A simple and effective proxy for those demands might be the number of FTE enrolments.

Another important issue concerns the current practice of 'tying' capital and operating transfers. Combined with the dramatic way that capital funds have been cut, this practice has probably resulted in a more severe capital shortage than would otherwise have occurred. It is generally the case that recipients of transfers are better off the greater the expenditure discretion they are allowed. It would certainly be difficult to argue that the Ministry of Colleges and Universities is in a better position to assess universities' priorities than the universities themselves. This is especially so in view of the unsatisfactory way that the Ministry currently goes about its evaluation of capital projects. I would therefore recommend that though the government may still want to distinguish between capital and operating 'allowances', that there be no attempt to influence the way these allowances are actually spent. If universities wish to run down their capital stock and pay their faculty more, or improve their capital stock and pay faculty less, then they should be free to do so. The responsibility of the government should be to ensure that the overall levels of funding are adequate.

NOTES

1 One should note that 1972/3 is not even the peak year. Capital grants peaked about 1969, when they were almost 14 times greater than in 1983/4. (See COU 1984, p. E-18.)

2 COU (1984), p. E-6. The actual figure is $10.5 million, of which only $5.6 million has been granted for new capital initiatives. The rest is for projects approved earlier.

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The implications of federalism for postsecondary education

Enid Slack

Postsecondary education was made a provincial responsibility under the British North America (BNA) Act in 1867 and it has continued to be under provincial jurisdiction since that time. However, in 1952 the federal government began to transfer substantial funds to the provinces for postsecondary education and it now contributes over $6 billion through direct transfers to specific programs and through grants to the provinces. The largest transfer is made through the Established Programs Financing (EPF) Act, under which the provinces receive *unconditional* transfers for the 'established programs' – medicare, hospital care, and postsecondary education. These transfers are designed to ensure that the provinces have adequate funds to provide these programs, but they are unconditional in the sense that they do not necessarily have to be spent on these 'established programs'.

Recent concerns over the use of unconditional transfers and their impact on provincial spending on postsecondary education and health care have led to some amendments to the EPF Act. With respect to postsecondary education, the federal government now monitors provincial expenditures and attempts to evaluate the extent to which 'national educational goals' are being met. These modifications appear to change the nature of the federal role in postsecondary education and give the impression of an increased federal involvement in this area of provincial responsibility. The purpose of this paper is to address the issue of the federal role in postsecondary education and to analyse its implications.

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The first section considers the rationales for federal-government involvement on the grounds of equity, efficiency, and the special character of education. The second section outlines the history of federal transfers to postsecondary education up to the current EPF arrangements. The third section then addresses certain issues to which the federal-government role gives rise, including the impact on provincial expenditures, and the extent to which minimum national standards and 'national educational goals' are being met. Finally, the last section takes a brief look at the future prospects for federal funding of postsecondary education.

RATIONALES FOR A FEDERAL ROLE IN POSTSECONDARY EDUCATION

Why should the federal government be involved in the field of postsecondary education, which the Constitution deems to be a provincial responsibility? Are not the provinces more capable than the federal government of choosing the appropriate level and mix of postsecondary-education expenditures? The literature on intergovernmental finance suggests that there may be circumstances or conditions under which federal involvement may be required. The two main justifications for a federal role in areas of provincial responsibility are on the grounds of fiscal equity and allocative efficiency. In addition, the special character of education which makes it national in scope may necessitate some federal involvement.

Fiscal equity

The first justification for intergovernmental transfers is to achieve fiscal equity for all citizens in a country where some public services, such as postsecondary education, are provided by provincial governments. It is often argued, for example, that each province should be able to provide some 'average' level of services by exerting an 'average' fiscal effort (or tax rate). There are at least three reasons why achieving this goal of fiscal equity may not be possible in the absence of some federal involvement. First, one province may not be able to provide the same level of services at the same tax rate as another province because the per capita tax bases are different in the two provinces. To collect the same amount of tax revenue in the relatively poor province (where poor is measured by the tax base) would necessitate a higher tax rate than in the relatively rich province (as measured by its tax base). Second, the costs of providing services might be higher in one province than in another, so that a larger tax yield would be required in the higher-cost province to provide the same level of real services in both provinces. Third, needs vary across provinces. For example, there may be more students to be educated in one province than in another. Larger expenditures would be required in provinces with larger needs and this means that a greater tax yield would also be necessary to provide the same average level of service. For these three reasons, then, it may not be possible to achieve fiscal equity across the country without some federal assistance.

To improve fiscal equity, the most appropriate way is to give lump-sum grants to the poorer provinces so that all provinces can provide an average level of services at the same rate of tax. The formula for these grants depends on the needs, fiscal capacity, and fiscal effort of the province, and also on the specific objectives of the federal government. As noted in Bird and Slack (1983, p. 465), it is often suggested in the literature that such grants are unconditional, but there appears to be little basis for this assertion. In reality, it is common to make these transfers conditional on the maintenance by the provinces of certain 'minimum national standards' in a particular service area.[1]

Allocative efficiency

Perhaps the most basic argument in the economic literature for intergovernmental transfers arises from the fact that the provision of a public service in one province may result in the spillover of benefits (or costs) to residents of other provinces. For example, a student being educated in Ontario will not necessarily continue to live or work in Ontario but instead may take the benefits of his or her postsecondary education to another province. Such interjurisdictional spillovers may result in a misallocation of resources. Each province only considers the benefits of public services to its own residents when it decides how much it should supply. It will thus tend to supply too little from a national point of view. Society as a whole would be better off – in the sense of using scarce resources more efficiently to produce goods and services that people want – if *all* benefits and costs were considered by the decision-making province, not just the benefits and costs in its jurisdiction.

To stimulate expansion of a service where there is an external benefit, one approach is for the federal government to give an open-ended, conditional matching grant. It would be conditional on being spent on a particular function. It would be open-ended in the sense that there would be no dollar limit placed on it. This assumes that the spillover benefits would increase as long as expenditures increase. And it would be matching in that the federal government would pay a certain specified percentage of the expenditures on the particular service. In theory, the matching rate would be set equal to the ratio of external benefits to total benefits. For example, if one-quarter of the total benefits spill over into other provinces, the matching rate would be 25 per cent: the federal government would pay 25 per cent of the expenditures and the provinces would pay the remaining 75 per cent. By lowering the price of the service to the province providing it, the grant thus provides an incentive to expand that service.

Character of education

Another rationale for a federal role in postsecondary education derives from the very nature of education. Postsecondary education is a fundamental input into the economic prospects of the country, its manpower planning, and its international competitiveness. The benefits of postsecondary education are national in scope. The Parliamentary Task Force on Federal-Provincial Fiscal Arrangements put it this way:

> Postsecondary institutions - not just universities, but also colleges, research institutes, libraries, archives and the like - are part of the intellectual and cultural fabric of any society. The enduring strength of a society ultimately rests more on these institutions than an economic, industrial or military power. (1981, p. 121)

Also, in summarizing the submissions to the Task Force, emphasis was placed on

> the vital role played by postsecondary education in providing the intellectual and scientific resources, as well as the trained people, that are essential to the attainment of the economic, social, cultural and language goals of individual Canadians, of

> the country as a whole, and of its provinces and regions. (ibid., p. 123)

It is the national character of education that justifies some (though not necessarily all) federal-government involvement in its provision. In particular, those aspects of education that are particularly national in scope, such as R&D, manpower training, and student assistance, require a co-ordinated effort rather than each province undertaking these functions on its own.

HISTORY OF THE FEDERAL ROLE IN POSTSECONDARY EDUCATION

Initial involvement

The federal government first got involved financially in postsecondary education in 1952 when it introduced to the provinces equal per-capita grants that were conditional on being spent on postsecondary education.[2] These were lump-sum transfers. Quebec objected to this federal interference into postsecondary education and threatened to reduce its provincial funding of postsecondary education if the federal transfers were accepted. This dispute was not resolved until 1959 when the federal government reduced its corporate income-tax collections in Quebec so that Quebec could increase its own corporate income-tax revenues. This concession was made conditional on Quebec granting funds to its postsecondary institutions that were at least comparable in size to the federal transfers in other provinces.

Cash-tax transfers, 1967

The next era in postsecondary-education transfers began in 1967 with a grant that was divided into two parts: a cash transfer and a tax transfer. Under the cash transfer, the federal government offered to pay 50 per cent of the operating costs of postsecondary institutions or $15 per capita, whichever was greater. Also, the $15 per capita was increased annually by the rate of growth of postsecondary-education expenditures. This part of the transfer, then, was a conditional, matching, open-ended transfer (that is, no dollar limit was placed on the amount of grant) designed expressly to stimulate provincial expenditures on postsecondary education.

Under the tax transfer, the provinces were given funds out of federal personal and corporate income-tax collections. These tax transfers can simply be regarded as unconditional lump-sum transfers to the provinces since these funds did not have to be spent necessarily on postsecondary education.

The cash-transfer part of the 1967 transfer for postsecondary education was open-ended, as noted earlier. This became very expensive for the federal government in subsequent years as provincial expenditures on postsecondary education escalated. As a result, in 1972, the federal government limited the annual rate of increase of the postsecondary-education transfer to 15 per cent.

EPF, 1977

A major change in federal funding came about in 1977 with the introduction of the Established Programs Financing (EPF) Act, whereby *unconditional* lump-sum transfers replaced the previous arrangements for funding of health care (medicare and hospital care) and postsecondary education. The EPF Act was the result of dissatisfaction on the part of both the federal government and the provinces with the previous open-ended, 50 per cent matching transfer. The provinces, on the one hand, felt that the conditions attached to the former conditional grant constrained them far too much in their own decision-making. They wanted to set their own priorities for health care and postsecondary education. The federal government, on the other hand, found that the open-ended nature of the conditional grant combined with a 50 per cent matching rate led the provinces to overspend on health and postsecondary education. There was no federal control (at least until 1972) over their transfers in these fields. Also, the federal government felt that these were 'established programs' and thus no longer required conditional, matching grants that would stimulate spending. A move to unconditional transfers, it was felt, would not result in significant cutbacks in the provision of these important services by the provinces. The validity of this assertion is an empirical question that is discussed below in the next section.

EPF, like the 1967 transfers, incorporates both a tax transfer and a cash transfer. The formula for the EPF transfers is very complex. Rather than present all of the complications, however, this paper attempts to provide some understanding of the fundamental aspects of the formula. Those who desire to study the complexities are urged to look at the EPF Act or descriptions of it in Parliamentary Task Force

(1981) or Economic Council of Canada (1982).

Under the tax-transfer side of EPF, the federal government reduced its personal and corporate income-tax collections to give 'tax room' to the provinces to increase their tax revenues – by 13.5 points for the personal income tax and one point for the corporate income tax.[3] Since tax yields (the tax revenues collected) vary across provinces, tax points are equalized to the national average using an equalization formula. This means that tax points are higher in a relatively poor province, for example.

There are three parts to the cash-transfer side. The basic transfer equals the federal average per capita expenditures on the three established programs for the base year 1975/6 plus a flat dollar amount. This total is then escalated over time by the growth in provincial population and a moving average of GNP growth.

The second part of the transfer is a transitional-adjustment payment. EPF was originally designed to be 50 per cent a cash transfer and 50 per cent a tax transfer, but so far, the tax transfer has been exceeded by the cash transfer in all provinces. The reason is that the economy has not grown very rapidly in recent years so that income-tax collections (and the tax transfer) have not grown as rapidly as expected. Also, with indexing of the personal income tax, the tax transfer has not grown as rapidly as it would have otherwise. The transitional-adjustment payment is thus a cash payment to raise the tax transfer up to the level of the cash transfer. Although all provinces still receive this payment, it provides relatively greater assistance to provinces with below-average tax yields.

The third part of the cash transfer is known as the 'levelling' payment. This was designed to equalize gradually the transition to equal per-capita grants. The 'levelling' payment meant that provinces with large expenditures on health and postsecondary education were levelled down over a period of five years and provinces with low expenditures were levelled up over three years.

In total, the three parts of the exceedingly complex formula for EPF come down to an equal per-capita transfer to all provinces (at least as long as the transitional-adjustment payment is in effect)[4]: it is an unconditional, non-matching, closed-ended grant.

A more recent amendment to the EPF Act does, however, call into question the unconditionality of the EPF transfers. Bill C-12, passed in 1984, has separated the EPF scheme into its two original components – health care (medicare and hospital care) and postsecondary education. For transfers that are supposedly unconditional in terms of where the money is spent, it is somewhat odd to divide the unconditional funds into two specific expenditure categories. Further, price controls (6 and 5) have been applied to the postsecondary-education portion of the transfers.[5] This means that part of EPF (that part designed for postsecondary education) will increase by 6 per cent in 1984 and 5 per cent in 1985. Finally, an amendment to Bill C-12 requires that the Secretary of State report to Parliament annually on the amount of EPF transfers to the provinces, provincial expenditures on postsecondary education, and whether 'national educational goals'[6] are being met. Neither Bill C-12 nor its amendment explicitly makes EPF conditional in the sense that these funds *have* to be spent on postsecondary education. However, there certainly seems to be some concern on the part of the federal government over how the funds are being spent and on how much the provinces are spending on postsecondary education. This issue is discussed further below.

Finally, in addition to EPF, the federal government provides over $2 billion in transfers to specific programs such as R&D, student-loans assistance, manpower training, and international educational support.

ISSUES

The fundamental issue is the role of the federal government in postsecondary education. The nature of federal involvement and the type and design of federal transfers depends on the objectives that the federal government is trying to achieve. This paper has suggested that the provinces can provide postsecondary education and determine priorities for education spending *but* that there are three important justifications or circumstances under which a national (though not necessarily a federal-government)[7] role may be required: fiscal equity, allocative efficiency, and the national character of education.

To determine the federal role, there are three basic issues that need to be addressed. First, what is the impact of federal transfers on provincial expenditures on postsecondary education and, in particular, is postsecondary education an established program? Second, are minimum national standards being met? Third, are national educational goals being met? Each of these is discussed in turn.

Is postsecondary education an established program?

One of the underlying assumptions of EPF is that postsecondary education (and health care) is an established program in that the provinces would not reduce significantly their expenditures on this function regardless of the nature of the federal transfer. What has been the impact on provincial expenditures on postsecondary education of the switch from a conditional matching transfer to an unconditional transfer? This is an empirical question that has not yet been studied. Some very preliminary information on federal transfers to health and postsecondary education and on provincial expenditures on these functions[8] suggests that the growth in transfers prior to EPF (that is, prior to 1977) and the growth of transfers after EPF were roughly similar.[9] The rate of growth of provincial-government expenditures on health and postsecondary education, however, fell dramatically after the introduction of EPF (see Slack and Crocker [1985]). In Ontario, federal transfers increased by over 37 per cent from 1974 to 1977 compared to 32 per cent from 1977 to 1980. The growth in provincial expenditures fell from 29 per cent to almost 16 per cent over the same period.

It is tempting to conclude from these preliminary numbers that the switch to EPF caused provincial expenditures on health and postsecondary education to fall. However, these numbers alone cannot be used to draw that conclusion since they give no indication of causation nor do they take into account the many other variables which influence provincial expenditures. For example, the restraint in government expenditures in the late 1970s could also explain the reduced growth in provincial expenditures on health and postsecondary education. Also, there is substantial variation in the growth of expenditures across provinces. Although the change appears to be dramatic for Ontario, the reduction in growth is much less for Newfoundland and British Columbia, for example. Again, other factors need to be considered.

To be able to draw conclusions concerning the impact of EPF on provincial expenditures on postsecondary education, it is necessary to devise and test a model of how provincial-expenditure decisions are made and what factors influence those decisions. Federal transfers would be one variable in this model. It is beyond the scope of this paper to devise such a model. For a further discussion of what is required, see Slack and Crocker (1985).

Although no empirical studies of the impact of the switch to EPF have been undertaken to date, earlier theoretical studies of the impact of different types of transfers (see Bird and Slack [1983] for a review) have suggested that conditional, matching transfers are significantly more stimulative than are unconditional, non-matching transfers. This result occurs because conditional, matching grants (which have to be spent on particular functions) lower the price of those functions to the recipient. Not surprisingly, then, they stimulate expenditures more than unconditional transfers that do not affect the price but only the income of the recipient.

Unfortunately the above results do not tell us what happens when the federal government switches from one type of grant to another. This depends, in part, on whether these are established programs. Also, even if one could conclude that the switch resulted in reduced growth in provincial expenditures on postsecondary education, what would be the implications? In terms of the rationales for transfers discussed above, one would still not necessarily know if minimum standards were being met or externalities internalized or national goals achieved.

The first unresolved empirical issue is whether postsecondary education is an established program and thus whether provinces will more or less maintain the required spending levels under different types of transfers. It is likely that a move to unconditional transfers would mean reduced provincial spending, but it is the extent of this reduction that is important. Nevertheless, there seems little justification to return to matching transfers where the federal government not only distorts provincial spending priorities by reducing the price of particular services but also cannot control the magnitude of its transfers.

Are minimum standards being met?

The second issue concerns whether minimum national standards are being met – whether there is comparable access to postsecondary education regardless of the province of residence. Again, this question is difficult to evaluate – what is meant by access, and what is meant by minimum national standards? However, even adamant decentralists see a role for the federal government in equalizing differences in the ability to levy taxes across the country so that some minimum standard, however defined, can be achieved in all provinces. To achieve a minimum standard, a conditional, lump-sum grant for postsecondary education is required. It would have to be conditional only on being spent on education (in order to achieve minimum standards for education); it would still be a lump sum so that it did not distort provincial priorities within the education function.

There may be other reasons besides different taxable capacities for provinces not providing minimum standards: needs and costs may differ across provinces. For example, some provinces may provide a disproportionate share of graduate programs; other provinces may provide bilingual programs. It is thus worth considering incorporating differential costs and/or needs into the grant formula as well as taxable capacity.

Are national goals being met?

There are some aspects of postsecondary education, as noted earlier, that are particularly national in scope. For example, the results of R&D benefits the whole nation rather than just the province or institution in which the R&D is performed. The results not only benefit the nation but they also add to national prestige. To stimulate this kind of educational function, significant federal involvement, for example, through conditional transfers, is required.[10] Similarly, manpower training is part of manpower planning, an economic function undertaken by the federal government. Thus national objectives for manpower planning will be significantly affected by the provinces' manpower-training strategies. Furthermore, the international competitiveness of a country is also dependent, to some extent, on how well educated are its citizens.

One oft-stated national educational objective is to allow students from any province to attend postsecondary institutions in any other province without barriers to such mobility.[11] It is not possible to think in terms of a national education community without the free mobility of students, faculty, and research across provincial boundaries. Federal-provincial transfers could be used to achieve such national objectives by making these transfers conditional on free interprovincial mobility of students.

Many of these justifications for grants on the basis of 'national goals' also point to examples of interprovincial spillovers from postsecondary education. Certainly, the benefits of R&D spill over into other jurisdictions. Interprovincial mobility of students can also be analysed as a spillover across provinces. In other words, national educational goals may come down to addressing the spillover problem. The federal government's role would thus be to urge the provinces, through the use of transfers for example, to take account of the benefits (or costs) that spill over into other jurisdictions.

Finally, it should be stressed that many of these national objectives could be met without direct federal-government interference. In other words, the federal government need not be the only instrument for achieving national objectives. An alternative mechanism would be to have some national body composed of university officials from across the country encourage such goals as interprovincial mobility of students and other aspects of national educational goals.[12]

CONCLUSIONS

The EPF scheme, along with the other federal-provincial fiscal arrangements, comes up for renegotiation in 1987. It would seem that the role of the federal government in postsecondary education will be reconsidered. The previous government was becoming increasingly concerned about its visibility and the accountability of the provinces. Visibility was a concern because the federal government claimed it was receiving little recognition for the billions of dollars going to the provinces, since this money was no longer tied to postsecondary education (or health care). The concern for accountability resulted from a fear that the provinces might be cutting back on their postsecondary-education expenditures and because national goals, however defined, were not being met.

Recent statements by the current government (see *Globe and Mail*, 11 December 1984, p. M6) highlight the 'national resource' aspects of postsecondary education and the need to establish federal priorities and accountability for this important *provincial* responsibility. This seems like a good time for the federal government to specify what it sees as 'national educational goals' and to determine how much of a role it should take and what its role should be in meeting these educational goals.

This paper has stressed that there are aspects of postsecondary education that necessitate a federal role, including the use of some federal-provincial transfers. In particular, grants should be provided to ensure that minimum standards are being met across the country regardless of the wealth of any individual province. Such grants should be conditional at least on being spent on postsecondary education and they should be lump sum so that provincial spending priorities are not distorted. Also, there are national aspects of postsecondary education that may necessitate a national presence in this area of provincial responsibility to ensure that goals such as interprovincial mobility of students are being met. The attainment of these objectives need not require direct federal-government involvement but they do require some national co-ordination.

NOTES

1 It is always difficult to define 'minimum' or 'average' standards. Usually, the national average is used. Obviously, the amount of the transfer will be determined in part by the measure used.

2 Interestingly, these funds were channelled through the Association of Universities and Colleges of Canada to avoid any complaints that the federal government was interfering in an area under provincial jurisdiction (Economic Council of Canada 1982, p. 159).

3 A personal income-tax point is a percentage of personal income taxes collected in the province; a corporate income-tax point is a percentage of corporate taxable income in the province.

4 This point is made by Courchene (1979).

5 Interestingly, 6 and 5 have not been applied to the health-care transfers.

6 It is never specified what these goals are. This point is discussed further in the following section.

7 This point will be addressed further below.

8 Although Bill C-12 now separates health and postsecondary-education transfers, this could not be done easily for the years for which data are available.

9 It is difficult to know what to include in federal transfers for health and postsecondary education under EPF. It can be argued, for example, that the tax transfer is merely a method to allow provinces to increase their tax collections rather than being an actual transfer of federal funds. However, the data used here do include the tax transfer, as is generally done in the literature.

10 Some would argue that a country such as Canada with a small, open economy should do very little basic research since the spillover benefits far exceed the benefits internal to the country. This argument is beyond the scope of this paper, however.

11 Students who attend universities in provinces in which they have not been resident for at least two years have difficulty gaining access to student assistance.

12 This point is eloquently made by Tom Symons in his paper in this volume and thus is not discussed further here.

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PART V: OVERVIEW AND CLOSING

An overview panel

WILLIAM JONES (Ontario Confederation of University Faculty Associations): I am the first person in my family to go to university and my grandfather was the first person in our family to ever go to school. People take education for granted, but universities and mass education in general are actually tremendously new features of our society.

A generation ago in Canada a university professor was hired solely to teach. If he – it was almost always he because there were hardly any women involved in the university enterprise – did research, he funded it out of his own pocket. One major change in the university enterprise over the last thirty years, then, has been the development of a research capacity within the university system, and the development of a tremendous research capacity within the Ontario-university system.

I have taught in England, I have taught in Australia, and I have always thought of the Canadian-university system as a tremendously thriving one in comparison. So why the implicit premise at this conference that there is something wrong with the university system?

I suspect that our problem is fundamentally a problem of image. The beliefs that most of the nine million people in Ontario have about the universities are very dated. They are the beliefs of the 1950s: that the university essentially is just a glorified extension of high school. There is little comprehension of the research role of the universities in our society. By and large, I suspect most people believe that universities are not central to economic development; rather, they see universities as peripheral, alright to fund in the good times but not necessarily in the bad times.

I suggest that the idea that there must be a lack of funds in the bad times is a myth. We have a government that can afford to spend $650 million to buy into Suncor, a sum of money that would run any university for the next dozen years. We have a government that can afford to let Ontario Hydro's debt-interest payments run to 2 billion dollars, or about twice what we spend on the total grants to the university system in Ontario. The problem is not that the money isn't there. The problem is one of priorities – of the universities being a relatively easy target for cutbacks in funding.

You hear from businessmen who perhaps ought to know better that decentralized control of our universities is somehow wrong, that what is needed is a much more hierarchical control. Yet good businesses don't work like that – they work on a decentralized framework. So far, we have had a very effective form of decentralized control of the university system in Ontario. In no sense has decentralized control meant that everybody has clamoured to do everything. The universities, in an autonomous fashion, have behaved in a remarkably responsible way, and I don't simply mean with regard to the demands of government but to the demands of our society in general. Even the University of Toronto, which is supposed to be the universal institution in our province, does not duplicate more than two-thirds of the course offerings in the province.

Decentralized control is not popular basically because it does not give politicians a lot of opportunity to interfere. Politicians say they are in favour of efficiency. But politics is not about efficiency; it's about power and control.

It seems to me that autonomy is vital to the continued success of our university system. And what a success story it is! We went from 100,000 students in 1970 to 160,000 full-time students today, *even though the amount of money available per student dropped by 25 per cent*. We went from 40,000 to 90,000 part-time students in the same time frame. These figures represent a tremendous increase, largely due to an increase in female students, that has for the most part gone unrecognized.

The problems of the university system are financial in nature. If we wish to attain the goals of excellence and of accessibility for a broad range of people in Ontario, we will need more money. I think every speaker today has made that point. The universities will be underfunded until we meet those twin goals. And it doesn't seem to be a matter of political reality to choose between those goals.

You will hear that perhaps what we ought to do, given the lack of money, is commit all of the available resources to so-called centres of excellence. I suggest to you that such a move would go against the major investment that we have already made outside the realm of the traditional university in Ontario.

You will also hear people advocate saving money through closing down some of the universities. Unfortunately, some of my own colleagues even say that. Although one of those colleagues didn't quite know how many universities there were in Ontario, he still thought there were too many. Yet if you close down all of Windsor, Laurentian, Lakehead, Algoma, Nippissing, Brock, and Trent, you have saved 156 million dollars, or less than two-thirds of 1 per cent of the Ontario budget. Thus, for a very, very tiny investment in terms of what we spend as a society, we have developed a major university system.

We need to take more time to explain to people what universities are all about and to counteract the old myths about universities. For instance, I often speak to Chambers of Commerce across the province and find I'm the first person from a university to do so for a dozen years. We often appear to be too polite to people who say we teach a lot of nonsense in our universities. Half the time, we don't even bother to argue.

Two or three months ago, retiring Premier Bill Davis told the Empire Club that his greatest fear was that young people in Ontario would come to see equality of opportunity as a myth. I would suggest to you that with 200 thousand young people unemployed in Ontario, and a government that seems to be willing to cut back on accessibility to its universities in Ontario, there are good grounds for thinking that equality of opportunity will indeed become a myth unless we as a community take steps to guarantee equality of opportunity.

ROBERT BERDAHL: In the long run you may be able to get people such as the persuasive Dr. Jones to change the implacable enemy of chronic underfunding. But in the short run, how are academics to handle the crisis of a slow winding-down of quality in the Ontario system? I agree that the system has a remarkable record. However, you can't live on history; it is not useful only to have cheerleading about how good you were or how good you would be if only people understood you more and gave you more money.

WILLIAM JONES: We have heard from many people today that there exists a state of increased competition for resources. I believe that one of the problems with the university community is that, as a whole, it simply has not competed for these resources. The medical profession competes all the way down the line; they are ruthless enough to put people's beds in a hospital corridor and have journalists come to photograph them if that's what they think they have to do to get funding. Now I am not suggesting that universities behave in such a totally socially irresponsible manner, just that, by and large, we haven't joined in the competition for funding.

ROBERT BERDAHL: I believe Dr. Jones also said something about politicians wanting control of higher education. If they do, they have gone about getting it in a strange way – through chronic underfunding and without any policies geared to ensuring the maintenance of program quality. My argument earlier today was that there is *too little* intervention from the provincial government in Ontario, so I find it strange to hear the government being accused of wanting control because of its decisions to underfund universities (which I disagree with) and to abstain from any positive policy intervention. Again, I think it hasn't exerted *enough* macro-policy guidelines.

There is a legitimate provincial role in the policy dimension which goes beyond retrenchment or rationalization. In any system, the government has a right to talk about the general shape and profile of the system. What is missing from the Ontario government are sufficient political-policy guidelines and delegation of authority to a buffer body that's strongly composed of academics.

Those of us in Academe who have worked on the interface with government know that there's a legitimate governmental role, and also that government is not going to put any money on a stump in the middle of the night and let the university leadership simply come and take it. Furthermore, we know that the sum total of our decentralized decisions, barring some miracle of Adam Smith's invisible hand, do not add up to the total public interest of Ontario. In my mind, those academics that recognize these facts should have stood beside John Wilson in the rationalization debate today rather than making his session appear to be a debate between the noble faculty with its pure academic values and the vulgar lay people who want to save money at our expense. Yes, if it was a debate, I was on the side of Mr. Wilson for the duration. However, at the end of his remarks, I felt that it was he who perpetrated a dichotomy that put me back on the other side from him: at that point, he tended to imply that those who believed retrenchment may be an unfortunate, painful necessity also believed necessarily in less accessibility. Frankly, just to put some distance between me and him on that point, I would strongly advocate at least continued accessibility if not enlarged accessibility.

How can I advocate enlarged accessibility given our scenario of constant, chronic underfunding? Where or how do we find the funds necessary to protect accessibility? Even the articulate Dr. Jones cannot be expected to miraculously convert overnight the minds of the legislative and political leadership on this issue.

I don't think narrowed access is necessarily part and parcel of the retrenchment scenario. I agree with Ian Macdonald and Jim Gillies that it is time to pound the pavements looking for different ways to fund research. We should ask the private sector if they can't see more of a vested interest in the higher-education system in Ontario. I would also suggest something that David Stager mentioned but didn't push to the limit, something that I discussed at lunchtime with Monika Turner from the Ontario Federation of Students: namely, to recognize, as painful as it would be to do so, that in the middle class there is still some untapped ability to pay for higher tuition fees or a student-aid fund for low-income students.

To the Canadian Association of University Teachers (CAUT), I would say that although talking about retrenchment may inspire a self-fulfilling prophecy, a possibly greater evil would be to refuse to take the painful damage-control steps in the face of obvious erosion of quality. You can push all you want for the necessary enhanced appropriations, but if you don't have a fall-back position in the absence of any change in funding, how can you protect program quality? It seems to me that faculty can't work one side of the street without recognizing the need to cover the other. We all recognize that there has been a slow run-down in quality in higher education by virtue of having taken in more students with the same amount of money: sooner or later that kind of erosion will have total mediocrity as its ultimate result unless there is some selective retrenchment.

I agree with Sarah Shorten that the dialogue on rationalization or about how the system is on the brink is a constantly recurring one in Ontario. This is because nobody has ever tried it. Either government never had the guts to delegate the authority to the Ontario Council on University Affairs (OCUA), or the Council of Ontario Universities (COU) has never been able to take off as a collective decision-making enterprise capable of making some of those painful internal decisions.

I would have to tell Dr. Gillies that some of his interpretation of the California system is inaccurate: he did not appear to recognize that the California system's rationalization was the master plan not of the state government, but of the higher-education institutions themselves. It was high-powered representatives from these institutions who produced the package of differentiated roles and functions which still survives to this day, albeit with some problems here and there.

I was reminded today of the lady in the *Wendy's* commercial who yells 'where's the beef?' by those anti-rationalization people who kept asking 'where's the saving?'. There are indeed some savings to be had in system rationalization. For example, the University of California has a high-powered faculty that teaches normally only six hours or less a week; but at the state college, the faculty teach 12 hours per week. If you think that it doesn't save the state money for the faculty at 19 state colleges to teach 12 hours a week instead of the 6 hours a week of their university colleagues on 9 university campuses, then your arithmetic isn't the same as mine.

WILLIAM JONES: What a dismal view of political life it is to think that we can do nothing to influence funding, that because the Minister of Colleges and Universities has said there will be no more money, that is it, we now have to rationalize – destroy – a thriving university system. I believe that we can influence that political process and that we really haven't begun to even try as a university community to do so. It's not simply a matter of dealing with politicians and civil servants: it's a matter also of dealing with the Ontario public at large. Here again, as a university community we haven't really begun to try.

PETER LESLIE: Professor Berdahl, you favour an OCUA with executive authority rather than a University of Ontario. In practical terms, is there a difference between the two?

ROBERT BERDAHL: An enormous one. First of all, there is a very great difference between a consolidated governing board, that literally governs all the institutions under its jurisdiction, and even a strong regulatory co-ordinating board, whose powers are limited to specific areas of university operations such as budgeting, planning, and program evaluation. There's an enormous difference between centralizing literally all the powers of governance in one board, with no subsystem boards for faculties, students, and campuses, and having even a strong buffer agency that does not have final say. An executive buffer board would not have the power to hire and fire faculty or admit students. Further, as all the day-to-day, week-to-week, month-to-month operational details would be handled at the campus level, it would not have power in this domain either.

As to which powers should go to such a strong executive-authority buffer agency, it seems to me that, along with planning and program evaluation, budget power would have to be there. In fact, the Wright Commission recommended this and I think the Blayden Commission also recommended this. I would feel more comfortable in seeing a buffer agency with strong academic inputs to it make allocative decisions, rather than the Ministry. The problem of course would be that the Ministry won't want to let go of that budgeting power. I would argue, however, that for the government to forgo that power may be a fair price to pay to get some of those painful reallocation and retrenchment decisions off its back. As we said earlier today, no politician wants the invidious distinction of cutting back or closing institutions.

PETER LESLIE: If I understood you correctly, you were saying that the executive authority would extend to budget allocation on a discretionary basis, planning, and program approval?

ROBERT BERDAHL: Yes.

PETER LESLIE: Is there a multi-campus university system anywhere whose governing body in practice exercises powers more extensive than these?

ROBERT BERDAHL: Many.

BEN WILSON: I don't see how Canada can at this time adopt the British model of governance, which is what your university governing committee seems to emulate. The British had 30 or 40 years of time to build up credibility before they hit the crunch. Our system has no long-term history and has already hit the crunch. I honestly don't see how such a governing committee is going to work, but I'm sure you have some ideas.

ROBERT BERDAHL: Well I do but they are not answers. I fall back on the Churchillian dictum that the thing I am proposing is the worst system except any other that might be tried. Nobody said it was going to be easy, but I still think that a composite decision-making system that includes a buffer agency with executive authority, however awkward and primitive it may be, has a good chance today of fumbling through. In other words, if you set up subject committees composed of academics who have the responsibility and a mandate to go around the province and familiarize themselves with the varying degrees of program quality, as awkward as their judgements might be I think that they still represent a way of proceeding less evil than throwing the task to the market, civil servants, or to the ministry. It's true that if the OCUA got that mandate, you couldn't expect overnight miracles. You've put your finger on a very sensitive point. However, at least the OCUA is not starting from zero. I heard tonight strong praise for Bill Winegard. I know what your reputation was at the Ministry as a Rhodes scholar who understands universities. I think some reservoir of credibility has been built up that would be useful if ever it came time to involve people like you in an OCUA with executive authority.

B. KYMLICKA: To follow up on the same topic, one of the problems here in Ontario will be exactly what Ben Wilson hinted at – that the government will not be prepared to hand over significant powers to an OCUA or similar agency with executive powers. Further, to fall back on one of my points made this afternoon, we should not ask the government to hand over something it does not have the legal authority to hand over, such as the authority to allocate total resources. One must also remember that the Ontario government very often gets its way by indirect and even underhanded methods, through pressure tactics and the like.

QUESTION: Professor Berdahl, you were contrasting the decision-making process of a free-enterprise system with that of a centralized bureaucracy. To have a system that is run simply by the whims of the student marketplace would seem to be absolutely silly. When I came to the university everybody wanted to be a doctor; seven years later they all wanted to be lawyers; and when they decided they couldn't be lawyers they all wanted to be chartered accountants. The whim seems to change every seven years: no rational person would want to gear the system entirely to those whims, except some economists perhaps. On the other hand, no one wants the heavy hand of bureaucracy telling them how to integrate new knowledge into the curriculum, how to undertake research planning at a relatively local level, and so on. One thing a bureaucracy isn't noted for is the initiative that it can bring to bear on new developments. Given these two extremes, what you want, it seems to me, is a decentralized system in which there is a framework of regularity or predictability within which institutions are shielded in large part from the vagaries of the market as well as the heavy hand of bureaucracy and are left free to take initiatives.

ROBERT BERDAHL: Excuse me, how can the institutions be shielded from the market if the funding formulas are enrolment driven?

QUESTION: As I understand it, the funding formula takes into account how enrolment patterns might change over time, so there is still a certain amount of predictability in the funding that the universities are going to get. However, while the formula has adapted to changes in enrolment patterns, it has not addressed the problem of the large overall increase in the enrolment that has rendered inadequate the overall level of funding. The government has not taken the advice of its advisory bodies to increase the funding to a level that would be adequate. If the government is not now taking the advice of its own advisory bodies, I don't think that giving an advisory body executive authority to deal with the individual universities is going to have much effect. The real problem is a much more political one of getting the government to take advice.

ROBERT BERDAHL: I accept large parts but not all of what you said. Clearly a decentralized decision-making model is not the same as a pure-market model. Universities are created and funded by the province, and I don't see it as illegitimate for the provincial interest to have a role (although not an exclusive role) in the kind of long-run, macro-policy decisions that will guide the development of universities. As far as the advisory body goes, I would never suggest that it be a heavy-handed bureaucratic body. I've said over and over again that it should be staffed primarily by academics. When I talk about centralized planning, I don't mean top-down planning done by a couple of bureaucratics in a smoke-filled room, I mean that slower, painful, broad participatory process that involves wide numbers of working academics and administrators.

We've anchored down both ends of the pole. Let's come then to the central problem of not being able to get the government to provide adequate levels of funds to maintain quality. I say it's the responsibility of academics to find a fall-back position until such time as wisdom comes that will protect the quality of the enterprise. And, given the chronic underfunding, is not quality being eroded?

WILLIAM JONES: I have a number of points to make. The first concerns university governing committees (UGCs). The operations of a UGC in Britain are of interest to *The Times's* higher-education supplement, but basically to nobody else. In Canada, however, the operations of the university system are of interest to a much broader spectrum. We are a much more populist society.

If you say to me, has quality fallen, then I have to ask: by what standards are we measuring quality? By, say, those of the 1960s? the 1970s? I have spent some of the last few weeks debating with the authors of *The Great Brain Robbery*, who insist that quality must have fallen simply because participation rates have gone up. But I say look at where the students come from – an increase in participation by women, and an increase in part-timers. Bob Bothwell finds it offensive that I take his book as implying that women and part-timers are somehow less capable of benefiting from universities, but that unfortunately is what the implication looks like to me at base.

Professor Leith drew a 'quality trade-off function' today as an aid in giving his talk – perfectly adequate, but as a description of what happens, God only knows. I suspect that we are at a threshold, that we have probably gone on as long as we can, given the underfunding, in maintaining the quality of our educational system. We are starting to see the cracks. However, as I keep saying, the cracks arise because of the problems of growth.

What you do not do in this situation is buy into a UGC model. A UGC model, in the way it has been suggested here, is not some bureaucrats in a smoke-filled room making decisions – it's some academics in a smoke-filled room reviewing decisions that in fact have already been made by bureaucrats in *their* smoke-filled room. It is not really a buffer body: it is a licensing body for decisions that have already been made.

DAVID WINCH (McMaster University): Either I have misunderstood Professor Berdahl or he leaves me with a problem, for as I understood him he said the following: more funding is the answer but in fact you are not going to get it, so you've got to make do, at least in the short run, by preserving quality but not at the expense of accessibility, and in order to do this we must give executive power to this revised OCUA. We have all argued that you can't preserve quality and accessibility on current funding, but now he argues that his revised OCUA can do it if it has executive authority.

Who would be a member of this revised OCUA? The best academics that academics can put forth are the same ones that they elect to senates, to faculty associations, and so on. Such academics have been unanimous in the last decade in saying that it is impossible to maintain the quality of and accessibility to the postsecondary-education system in Ontario given the current level of funding. Let's also take a look at the people that have been appointed by the minister to boards of governors and to boards of regents. They too have said that it's impossible to maintain quality and accessibility. The Fisher committee, composed entirely of people the minister named, also said it's impossible. Furthermore, the Bovey Commission is probably about to agree its impossible. Thus, everyone, be they academics or not, is unanimous that the job is impossible. If everyone thinks that the job is impossible, who's going to take it on?

ROBERT BERDAHL: I said earlier that people in a policy process look on the game differently if the stakes involve real rather than monopoly money. Until now the whole advisory process has been chasing shadows. If, however, the advisory body had executive authority, I think they could take remedial steps to minimize the damage caused by underfunding.

DAVID WINCH: Your point presupposes that we're not currently making the best use we can of the dollars we've got. That point isn't conceded by me.

WILLIAM JONES: We've been asked why hasn't rationalization taken place and we've been discussing the same for God only knows how long. I suspect that so-called rationalization hasn't taken place because it would lead to long-term decline of the university system even faster than anything we can imagine in our muddling through right now. Rationalization – what exactly would that mean? It would mean turning our backs on the major investment that we have made, probably outside of the major university centres in Ontario; that we go to Laurentian, Trent, Brock, Windsor, Lakehead and tell them they must cut back so that we can preserve the centres of excellence. It seems to me that a better way to preserve centres of excellence is through allowing a certain amount of competition between our universities. For example, we have a much better University of Toronto now because of Lakehead, Laurentian, Windsor, Brock, and Trent. Any cutback on the investment we have made outside of the traditional-university arena, then, is to me not going to produce centres of excellence. Rather it is going to lead to a decline in our university system.

CLARK LEITH: One of the problems I have with most of this debate is that it is asking the question: should we destroy the present system? That is the wrong question. I think what John Wilson and Robert Berdahl were saying today is that we've got to learn to live with the amount of money that the province is prepared to make available, at least in the short run. Another assumption of this debate seems to be that cutbacks would principally affect those people who have only recently gained access to the university system, particularly women and part-time students. However, I would not expect women and part-time students to be the ones rationed out of the system.

THOMAS COURCHENE: The point I wish to make relates to the overall fiscal context in which government everywhere find themselves. In the 1960s the Canadian economy was riding on a cushion of economic growth and that growth was utilized, among other things, to build up a comprehensive and valuable set of transfers to persons, businesses, and provinces, resulting in a socioeconomic system perhaps second to none. But the 1980s are very different. Growth and continued productivity increase are no longer with us. Over the near future the entire system of transfers will be under scrutiny in order to ensure that it is consistent with enhancing our growth and competitiveness. In fact when this conference was being organized one of the things that crossed our minds was that if one wanted to help universities then we might be much better off mounting a conference on health care since this is the leading edge of the problem – roughly one-third of every Ontario budget dollar goes to the health area and this proportion is likely to rise as the population ages. Given that the health care system appears to have a much stronger constituency among the voters than does the university system, a rapid growth in the former is sure to put pressure on the latter.

There is, of course, a danger that if the university system were to agree unilaterally to rationalize, then governments would, no doubt, concentrate any cuts in this area. However, it is also the case that each area asking for more funding is not the answer. From my vantage point, the university sector, like all others, has to come to grips with three underlying trade-offs in the system – equity vs. efficiency, centralization vs. decentralization, and private sector participation vs. public sector participation. I see the economic environment over the next few years moving these trade-offs in the direction, respectively, of efficiency, decentralization, and private sector participation. In short, I think we are spending too much time arguing for an increase in funding and not enough time focusing on how we strive for excellence, efficiency, and even equity under a regime where funding growth is curtailed, as it probably will be.

DAVID FOOT: When the medical constraints started to happen in the health-care system, doctors put together a very well-organized letter-writing campaign directed to *The Globe and Mail* and *The Toronto Star*. Day by day, different doctors from different regions now send those letters in and make sure they get published. Do we do that sort of thing? No. But I think we should.

Second, my own research on economic growth suggests that higher education has contributed to productivity. Maybe one of the big reasons that productivity has lagged over the last half of the seventies is that universities are constrained in the way they do research. Indeed, my own work suggests that productivity would be lagging even more if we hadn't had the baby boom.

WILLIAM JONES: The assumption seems to be that over the last 14 or 15 years nothing has changed in the universities, when in fact it seems to me that the universities have made major changes already to accommodate underfunding. At my university, for example, arts enrolment has increased by about 8 per cent in the last three years, but our faculty complement has fallen by 7 per cent. That's retrenchment. Over the last six years, the numbers of professors in faculties of education has fallen by 15 per cent – that's roughly equivalent to closing, in terms of the faculty complement, about one-and-one-half of the existing faculties of education – in response to changes in student demand and so on. We have already learned how to accommodate underfunding; we have learned to be more efficient; and we have learned to be very effective in a situation of underfunding. We don't have to go on learning the same lesson. Perhaps if we did behave as the doctors behave and simply said that we are not going to put up with any more of this, we might indeed see a change in our situation.

PETER LESLIE: I am still thinking over the message that Dr. Berdahl has been giving us. I think he has been putting out to us a challenge that is much more fundamental than any of us realize. We've been talking about a differentiated system as one in which you have some institutions that are leading in research, others that are perhaps doing a better job of undergraduate teaching, and others that are the best by this or that other criteria. Dr. Berdahl appears to be taking this definition a step further and looking on a differentiated system as a stratified system, where some institutions are a lot better at *everything* than some others, and where some second-class institutions don't perform well at all. Now I don't know if this is a distortion of his model, but it does seem to be the master plan for the California system.

I became intensely aware in my study of Canadian universities a few years ago of how much our instincts in Canada seem to differ from those south of the border. One thing that impressed me enormously was how consistent we are in this country in rejecting the California style of stratification. Although each province, not only Quebec, appears to insist on fostering its distinctiveness relative to all the others, all seem to share the same basic assumptions about the kind of higher education system they want. All emphasize the importance of maintaining minimum standards, and all tend to reject favoured treatment of a particular class of institutions. To me, then, Dr. Berdahl is ultimately challenging a part of our culture.

ROBERT BERDAHL: First let me address the issue about the relative lack of importance of structure, that any system has a potential to succeed. I buy that – I have always said that structure is only a means to the end of delivering the substantive products of higher education, and I have always felt that the more important dimension involves the philosophical debates about what the universities ought to be. I have been giving you, for better or for worse, my own philosophy on the marginal value of one structure over another. However, I recognize that there's a lot of tinkering with structure that has very little impact on different outcomes, and I am under no illusions that any one of the structures I have mentioned is a panacea.

On Professor Leslie's point about stratification, I would say: if you have enough money to have the gold standard for everybody in higher education, go for it. But if you don't, do you let all your institutions slowly decline together, or do you try to develop some pattern of differentiation? I don't know if you heard me mention it earlier, but there are different patterns of differentiation, not just the stratification one we have in California.

SARAH SHORTEN: In all this discussion about rationalization, it seems to me that what is being suggested, by Professor Berdahl in particular, is that as responsible academics we are failing in our duty insofar as we are refusing to accept the facts of life and hence work within the parameters of expected government generosity. But it also seems to me that the academic community has if anything at least an equal responsibility to make known the extent of the damage caused by underfunding. To cow-tow in this regard would be to fail in our public responsibility to our students, to our colleagues, and indeed to the public of this province. Already, most universities in this province over the years have systematically tailored programs, and reallocated and pared budgets. A system of rationalization is already being handled pretty responsibly in this province. I do not think that centralizing rationalization would amount to much of an improvement on efforts that have already been made.

GEORGE ALLAN (Lambton College): Given the premise that increased student numbers and government constraints have led to underfunding and hence a real concern about quality, to what level would the student population have to shrink in order to ensure the quality we want?

WILLIAM JONES: There has been talk about the possibility of a 10 per cent cut in enrolment, because that was in one way foreshadowed in one of the Fisher Committee's scenarios. However, it doesn't seem to me that such a cut would automatically lead to any increase in the quality of the universities. In fact, I believe that a central problem for the universities is that we appeal only to a minority of the population. It's only a minority of 18-year-olds that are going into our universities, it's still only a minority of the people in our society who ever directly participate in universities. In a democracy we should be making an appeal to a majority.

If we shrink enrolment hoping to maintain quality, what will automatically happen is that universities will be an easier target for government cutbacks. In that event, we would not only be a smaller system, but, proportionately speaking, we would still be underfunded. Thus, there is not necessarily a relationship between a cutback in student numbers and a maintenance of quality. To think so is to assume that universities operate in a political vacuum, which of course they do not.

ROBERT BERDAHL: Speaking of broadened access, a good idea would be to try and collaborate with the CAATs much more than I think the universities in Ontario are doing now. Let's be blunt – there's a little bit of arrogance and introversion in the university sector that is stopping it from examining the real and potential value of the nonuniversity sector. Further integrating the CAATs into the Ontario-university system would be one way of allowing for broadened access without additional expense.

Rapporteur's remarks

Bernard J. Shapiro

I should like to begin by thanking the Ontario Economic Council for having this conference. I must admit that during the conference itself I did wonder from time to time whether or not it had been a good idea. Was it just another interesting but not very productive conversation about higher education? I certainly could not claim that any radically new insights had been presented. Nevertheless, I believe that the conference has been useful, for the problems of higher education in Ontario persist. Some of the conference participants seemed to wish to deny this, almost as if an admission of difficulty was also an admission of guilt. I do not think that anyone need apologize for the accomplishments of the Ontario university system, but this need not blind us to present difficulties and future uncertainties. One of these difficulties is that we within the university community are speaking, far too often, to each other rather than to other citizens and citizen groups with either a stake in the outcome and/or the power to affect it. Thus, a continuing effort at discussion – especially on as broad a basis as the Council originally planned – is worthwhile in principle, however exasperating it may sometimes appear in practice.

ACCESS

In many ways, the conference covered a lot of ground. It began with Professor Berdahl's plea for selective retrenchment through a buffer body with executive power, and it went on to Professor Astin's consideration of excellence defined in terms of talent development and the differential resource-investment decisions that would follow upon a

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policy choice as between an elite, an egalitarian, or a remedial model of higher education. Professor Foot's paper focused on the demography of student demand, and he encouraged us to be optimistic about the large numbers, albeit of different kinds, of students who will be demanding admission to university programs. This paper followed, interestingly, Professor King's consideration of community colleges which treated, among other things, the relationship between the universities and the community colleges. If what is currently seen as the relative advantage of the colleges as compared to the universities in attracting new client pools continues to hold, this relationship becomes of considerable interest, for we cannot assume that the new kinds of students seeking university admission will be students for the same kinds of programs that the universities now offer.

OPERATIONS

The papers on issues concerning access were followed by the most controversial presentation of the conference – Mr. John Wilson's suggestion for a radical rationalization of the Ontario university system in order to maintain excellence in the face of declining resources. The most obvious failure of the conference was its apparent inability to take Mr. Wilson seriously. The responses to his paper were rhetorical rather than substantive – amounting to a passionate claim of virtue on behalf of the university and an aspersion of knavery to any of those who are not either admiring our virtue and/or insisting that it be better funded. Even Mr. Wilson's very collegial notion that one should try to organize the ground rules of any proposed change in advance along with the people who are going to be affected was not effectively explored.

The conference's second day began with a consideration of the impact of the new information technology on university teaching programs, and in this context, Professor Brzustowski's recounting of the experience of the University of Waterloo was both informative and helpful in focusing attention not so much on resources to be saved – apparently minimal even in the best of circumstances – but on questions concerning the model of education to be realized: namely, to what extent is higher learning a question of the interaction between a student and knowledge as opposed to a student and a teacher? Is education a cottage industry or an industrial sector?

Professor Symons returned to an issue raised by Professor Berdahl at the beginning of the conference, and that is the matter of process in the governance of systems of universities. The whole question of the federal role within the process of Canadian higher education is, of course, an important one. Professor Symons argued, not unpersuasively, for a wider presence and, more particularly, for the potential of a group such as the Council of Ministers of Education, Canada in this area.

The question of a federal role raises a difficult issue – one that arose many times during the conference – and that is the issue of centralization/decentralization. In some ways, this problem exists for Canada as a whole, quite apart from higher education. As Canadians move from a traditional practice of anglo-conformity to an aspiration of multiculturalism, it remains to be seen whether we can both celebrate our differences and induce toleration and coherence at the same time. Similarly, with universities, there remains unresolved the question of the issues on which institutional autonomy is to be preserved as opposed to those on which broader provincial and/or federal policies are to be enforced.

FUNDING

I found Judith Maxwell's summary of the possibility of a new emerging relationship between the university and the corporate sector to be of considerable interest. Professor Tarshis's response focused on the dangers of this involvement, but his caveats did not seem to me to be convincing. After all, there are no risk-free futures, and if we insist on treating each new idea either in terms of its logical extreme or in terms of its most negative possible outcome, we will be paralytically committed to the status quo. All strategies turn out to be silly if they are pursued without qualification and without discrimination. Incidentally, in this conference session on 'the corporate relationship', it was also useful to hear the phrase 'participation rate' used with a reference to something other than how many postsecondary-school students attend university; in this case, the reference was to how many corporations – apparently not many – participate in university giving.

With regard to Peter Leslie's paper on financing techniques, I was particularly attracted not so much to the details of the paper as to Professor Leslie's analysis of the political, financial, and educational contexts within which the funding-mechanism question is being addressed. An aspect of university life that deserves much fuller attention than it has so far received in such analyses is the university's internal politics. One of the major unresolved problems in Canadian higher education is how to preserve the values of the collegial tradition while at the same time trying to exert some managerial decision-making responsibility for a large, complex organization.

Mr. Dowd's paper on capital funding spoke, I thought, for itself. I cannot, however, accept his final recommendations since they are based on an assumption that overall funding is adequate. Not only is overall funding not adequate at present; it is unlikely ever to be seen as adequate. Universities are in the business of expending resources to achieve desired ends; as funding levels increase so will the number and quality of the ends we pursue. With regard to funding more generally, I do want to thank Dr. Slack for what I thought was a very clear presentation of the federal funding program. She seemed to choose exactly the right (minimal) level of detail. Although general policies become very detailed in their practical application, this detail is not either helpful and/or relevant in any discussion of new policy directions.

OVERVIEW

In addition to all the major papers, there were, of course, the contributions of the discussants and panel members, contributions that varied in type and in the extent to which they were actually related to the paper that was being discussed. There were also some lively interventions, or sometimes lively interventions, of the audience – sometimes relevant, sometimes irrelevant, sometimes rhetorical, and sometimes substantive. Indeed, the breadth of the ground covered made the conference experience a little surreal. It was rather like taking a university summer course where one has a lot of class time but very little thinking time. This rapid movement from one topic to another seemed also to encourage responses from participants that were closer to campaign speeches than attempts to explore the issues raised. This kind of response became less noticeable as the conference proceeded if only because the positions of everyone participating became so transparent that they could be, and were, easily discounted.

This skirmishing activity did, however, have one very salutary effect. It reminded all participating that in a central area of public policy, research never provides a decision. The decision is always a political matter, and there is an established political process for making that decision. What research provides is data upon which that decision might be based and in the light of which that decision might be better informed. In this regard, I was glad to hear at least one university president put forward a position based entirely on faith. There is no reason why we cannot draw strength rather than embarrassment from a faith in education just so long as we do not claim that this faith is based on empirical evidence that is absolutely clear.

Although I would suggest that as a regulated public industry Ontario universities are a more homogeneous grouping than would be the case under ideal circumstances, they are, in fact, a lot more heterogeneous than seemed to be publicly admissible during the conference itself. The aspirations of our universities may be similar; in fact, they are probably all too similar. Present reality is, nevertheless, another matter and the understood although not official stratification of our institutions in the public mind, while not entirely fair, is, I would submit, a sign of basically healthy differentiation.

With the benefit of albeit short-term hindsight, I would have preferred that the conference papers had been more homogeneous in terms of their focus on public policy. Since participants were generally already well informed, it was only in the public-policy area that new ground could be considered. On the other hand, with regard to the conference participants, the problem was, again, too great a homogeneity. There appeared to be primarily two groups of participants: government people with some particular interest in education, and university people. It was, of course, better that these two groups should attend rather than just one of them, but the number of groupings was not large enough given the problem of explaining and explicating the challenges of higher education to people other than ourselves. This very problem of participation does, however, remind us, once again, of the lack of a developed constituency for the universities in the wider community.

Consensus

Despite some political and some substantive differences between participants, there were some wide areas of agreement. For example, everyone agreed on the desirability of a more substantial relationship between the universities and the community colleges. I found myself a party to this agreement not so much because of the credit-transfer potential that seemed to be the focus of most attention as because the very existence of the community colleges may enable the universities to better resist the temptation of turning themselves entirely into training institutes. I believe that the University of Toronto's Professor John Crispo was right in suggesting at one point in this conference that when forced to choose, people will prefer their health to their education. Moreover, they may well prefer training to the kind of education that universities offer. These two understandings must be faced forthrightly if the universities are ever to be effective in the development of the constituency they must have for their effective survival.

There was also agreement on the matter of university access. Everyone, it appears, believes that such access should be independent of financial and minority-group status, although no conference participant seemed both willing and able to take up the challenge of one of the speakers who suggested that access for minority groups meant not only admission but differential treatment in terms of program design. What was also absent from this discussion was any consideration of access to university programs, for example, in the research and service areas, outside of teaching.

The conference participants also agreed that the Ontario universities have accomplished a great deal and are, moreover, salient for the future of the province.

Finally, although not all participants agreed on whether 'underfunding' was an appropriate descriptive term, all were of the view that the fiscal constraints facing universities were a major policy challenge. The participants were divided, however, on the appropriate response to this challenge, and the division was primarily between the centralists (e.g., Robert Berdahl, John Wilson) and the decentralists such as Leslie. Each of these groups then subdivided on the question of breadth of student access (i.e., whether we ought to be admitting a few more or a few less students than at present), but everyone suggested that their particular policy could and, indeed, should be adopted in the name of diversity, responsiveness, and excellence – either preserved, recaptured, or created.

Unresolved issues

In the midst of this agreement in principle and disagreement over strategy, three important points seemed to be entirely absent from the discussion. First, although there was considerable emphasis on the public and student beneficiaries of university activity, there was virtually no mention of a third class of beneficiaries – university faculty and staff. After all, many university activities can only be explained as rational by suggesting that it is university careers that are being reinforced. This need not be a disreputable motive just so long as we do not promote survival by calling it excellence.

Second, there seemed some unwillingness to admit to what I believe has been a decline in the Ontario-university system. It may be that we in universities have accomplished miracles in the face of the given constraints. Nevertheless, in each month of my last eight years as an Ontario-university administrator, I have been visited by faculty, individually and in groups, bringing concrete examples of the decline forced on their programs by the lack of budget resources. I do not believe that all of these visitors were liars. I believe, therefore, that some programmatic decline has already occurred.

Third, there seemed an inadequate appreciation at the conference that there is no single solution to the problems facing Ontario's universities. Ontario is neither historically nor psychologically the land of the great leap forward, and further, the search for a single dramatic solution is probably a recipe for disaster. It is true that such a dream relates well to our nostalgia for a simple, and usually more golden, past. It is not, however, ordained in natural law that universities should exist and be well funded. Moreover, the danger of our fascination with an imagined past is that it will not only bind us to the status quo but it will also encourage us to project the solutions to our problems onto someone else, probably at the same time as we are insisting, in some perverse way, on institutional autonomy. I do not think that this will be an adequate response.

FUTURE DIRECTIONS FOR GOVERNMENT AND UNIVERSITIES

I believe that each sector of society must come to play an activist role with regard to higher education. In this sense, I found Professor Berdahl's formulation of the problem in terms of the contributions that might be expected from the political, bureacratic, academic, and market groups particularly helpful.

What role should the political sector play? First, it seems to me that we ought not, in this area, to focus on different funding mechanisms, for although various formulae differ in their systematic effects, they do not differ in terms of the control that can be effected through them on the universities by the government. What the political sector should stress are the superordinate social-policy decisions with regard to (a) the goals and objectives of higher education; (b) the funding levels, both operational and capital; and (c) student access. These are decisions that belong essentially in the political arena, although to each citizen and citizen group there remains the responsibility of a substantial effort to influence these decisions.

In terms of the bureaucratic contribution, I will limit my remarks to the appropriate role of the 'buffer' body that advises government with respect to university policy. I believe that there should be such a body and that it should have executive authority, for whatever the theoretical value of strictly advisory roles, the latter have led in practice to a clear avoidance of responsibility by all parties and, therefore, to unproductive indulgence in mutual recrimination when it comes time to make a difficult decision. I would not suggest, however, that this buffer body receive executive power with regard to budget allocation. Further, I would provide it with a strong research capacity and the mandate to think through more carefully than we have done thus far the rather tangled question of the relationship between universities and manpower planning.

The academy itself has, of course, an enormous role to play. Thus, in addition to our standard work in teaching, research, and service, we must improve our performance with regard to conveying to the public what we are, what we have been able to do, and what we will be able to do. We must, of course, be prepared to cope with the success of this effort at communication, for in some cases, familiarity will breed contempt. It is not that the universities have a lot to apologize for, but they do have something to apologize for. We have not, for example, responded very imaginatively to the needs of our undergraduate students. Thus, the contribution that we ought to make through the general education of our undergraduates has not always been realized. It is true that part of the reason for this is that few of our undergraduates come to the university for general education. They come, in many cases, because they see the university as a social-mobility ladder. It is, however, our joint responsibility not to simply retreat behind watered down versions of our graduate programs but to create something new and valuable for our undergraduates – whatever their initial motivations for seeking us out.

In terms of the market, although I believe that James Gillies was wildly optimistic about the possibilities of private-sector support, I do think that universities must explore such potential sources more actively than we have done thus far. I also believe that tuition fees should be tied to costs and should increase somewhat from present levels if only in recognition of the extent to which important private benefits flow from a university education. In general, although I recognize that the university is not a business organization, some greater sensitivity by the university to the marketplace is warranted. Any metaphor of the multiversity as a monastery seems woefully inadequate to the realities of our present century.

Impact of 'hard times'

In Canadian society, we are currently in a period that is much less buoyant about the economic future than was the case just a few short years ago. Thus, it is not surprising that with regard not only to higher education but to all institutions, there is a pervasive concern about cost effectiveness, evaluation, and social control. We are in retreat from universality with respect to social programs; we focus on merit rather than on entitlement, but more than anything else, we sense that the future seems to be going to those who are fast on their feet. Adaptability, flexibility, strategic planning, and entrepreneurship are all dimensions in which universities will have to improve their performance. In this context, size may be a problem rather than an advantage. What will certainly be required is a decentralization, within universities, of the opportunities for innovation. In almost every university that I have visited recently, the response to budget constraint has been to centralize innovation. This, however, has had the effect of playing off innovation against innovation, instead of innovation against the status quo. Nothing could be better calculated to decrease rather than increase our responsiveness to the unfolding future. Moreover, one of the reasons for decentralization is the same as one of the reasons for academic freedom. The ultimate justification for both is the lack of any final anatomy of knowledge or any ultimate monopoly on the truth.

There is, of course, no final, rational pie in the sky for the universities. Just as there is no uniquely appropriate solution to the problems facing universities, there is no imaginable interim-solution set that is permanent. All solutions are temporary solutions; that is, they will have to be re-evaluated in the light of future experience and future developments. As institutions, universities will constantly be seeking to find those fascinating interstices where private needs, public benefits, and our own self-interest come together. The rather existential nature of the problem should not be a cause for despair but an incentive to action. It is time, it seems to me, to stop resting on our laurels, however well-earned and however illustrious these laurels are. It is time to stop limiting our efforts to telling ourselves what other people or other groups should do. We must take action ourselves. Some achievement of the neoconservative agenda may well be required for a return to a more liberal environment in the future.

APPENDIX

Ontario universities: current issues

Arthur J.R. Smith

The Ontario-university system has been in a dynamic phase of growth and change during the past four decades. For most of this period, it experienced a huge expansion in almost every conceivable dimension. In more recent years, slower expansion and increased tensions and strains have appeared within the system. Externally, as well as internally, new questions and complexities have emerged, and these have triggered a widespread series of reviews and appraisals of many basic issues regarding the structure and operations of the system. Also, growing questions and concerns have been expressed about the perceived responsiveness to large and accelerating changes – both current and prospective – in the economic, social, political, and cultural environment.

The latest of these reviews is being undertaken by the Ontario Royal Commission on the Future Development of the Universities of Ontario (Bovey Commission). It was established under the chairmanship of Mr. Edmund C. Bovey in January 1984, and was required to report 'a plan of action' to the Ontario Ministry of Colleges and Universities by November 15, 1984. The following overview paper will focus mainly on a selected number of key issues that are being addressed by this commission.

THE ROLE OF UNIVERSITIES AND EDUCATION

But before outlining these issues, it is perhaps useful to consider the

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At the time of this conference, Arthur J.R. Smith was an advisor to the Ontario Economic Council and is now Chief Executive Officer of the Canadian Labour Market and Productivity Centre in Ottawa.

role and purposes of the universities and, indeed, of education generally. Clearly, views about the role of universities in modern times are shifting more towards broader social concepts. The following five quotations speak for themselves:

1 [Universities are] institutions committed to the creation, preservation and transmission of knowledge in all its forms through research and teaching .... (Council of Ontario Universities 1984, p. 1).

2 The fundamental objectives of the university system are:

- to develop a more educated populace
- to educate and train people for the professions
- to provide study at the highest intellectual level
- to conduct basic and applied research, including development and evaluation
- to provide service to the community. (Bovey Commission [1984]); iterated from Fisher Committee 1981, pp. 1-2).

3 A somewhat different formulation of the objectives listed in the second quotation, one that is explicitly preferred by the Council of Ontario Universities, can be found in the statement of objectives made by the Honourable William Davis in 1967 when he was Ontario Minister of University Affairs:

- the provision of skills and knowledge that will allow graduates to play a vital role in our society;
- the promotion of the powers of the mind so as to create men and women with a love for learning and the motivation to seek new knowledge throughout their lifetimes;
- the search for truth and new understanding beyond the frontiers of present knowledge;
- the transmission of our common culture both to its student body and to the wider community;
- the provision of graduates whose attitudes are consistent with the free society in which we live.

4 There are some things which a university is not. It is not a reform school in which all the mistakes of parents and school teachers can be corrected ... It is not a community centre, though I hope it can be of use to the community. It is not a place for conditioning young people to a docile and conforming citizenship or employment. It is not a graduate club ... It is not a collection of trade schools adding to the prestige and privilege of various occupations. It is, or should be, a society of scholars ... devoted to the education, presumably the advanced education, of the young ... and to the preservation and extension of human knowledge ...
A person may be impressively knowledgeable and yet uneducated. He may be ignorant of many things and yet be an educated person ...
I believe in persons, not methods. Nothing in education can take the place of the occasional glimpsing of the workings of a fine mind ...
If a person is to be considered even moderately educated, he or she must be able to use at least one language with clarity, without ambiguity, and with economy. If, in addition, it can be used with taste and distinction, so much the better ... Language is not merely a mode of communication. Over much of the field of knowledge, language is the indispensible tool of thought ...
A person who bears the mark of education is one who can range freely far beyond his parish pump, whether the pump be in a great metropolis, the quiet market place or an ivory tower built of limestone. Man rises at times, above the animal world, not merely because he has a thumb that turns inwards, but because by communication and record, he can experience the culture of many lands and be the heir of all ages. (Mackintosh 1951.)

5 All education should be a training of mental faculties. Its purposes are: to develop and train the natural powers of the mind; to make it quick, apprehensive, accurate, logical; able to understand argument; able to search out facts for itself; to draw from them the proper conclusions; to reason and to understand reasoning; in one word – to think. Thus the real test of efficiency in education is not the accumulation of data or the acquisition of knowledge, but the devel-

> opment of intellectual power. (Sir William Peterson, Principal of McGill University, 1904.)

It is left to the reader to reflect and speculate about the implications of these different views for some of the key issues affecting the future of Ontario universities – issues in such fields as funding, quality, access, and rationalization.

FUNDING ONTARIO UNIVERSITY EDUCATION

At the heart of most of the basic issues relating to the future of the Ontario university system are questions about financial resources.

Some brief prefatory comments may be useful to provide perspective about such questions.

From the early 1960s through the mid-1970s, a surge in the growth of universities occurred that would have been unbelievable to virtually any Canadian perspective of the 1950s. A whole series of powerful forces generated this unprecedented growth, such as:

- the demographics of the postwar 'baby boom'
- the even greater force of rising enrolment ratios of the 18-to-24 age group
- a huge rise in part-time university enrolment
- the vastly increased conviction that there were high future returns from investment in human resources at the more advanced stages of education
- the expanding financing capabilities of a vigorously growing economy
- the prodigious growth in the size of governments and their massive involvement in university development
- the attraction to (and retention in) universities of many of the best minds in the country (coupled with extraordinarily improved compensation, cash and non-cash, in the university community).

There was not only a vast expansion in size and diversity, but also great growth in depth and wealth. To illustrate the magnitude of this development: operating expenditures on universities increased about tenfold in this decade-and-a-half (about fivefold in real terms), and operating expenditures per full-time student approximately doubled in real terms.

There was also a huge accompanying expansion in capital investment in both existing and new universities, as well as the development of a whole new postsecondary-education system in the community colleges.

But this extraordinary surge in spending on universities moderated in the 1970s – in the case of capital spending, early in the decade, and in the case of grants for operating expenditures, by the latter part of the decade. For example, capital spending in Ontario shrank after 1972. Real university spending per student began to plateau in the mid-1970s and has shrunk in recent years. But it is relevant to note that these real expenditures per student are still very substantially above the levels of the late 1960s, and still over twice the levels of the early 1960s.

Associated with the clear moderation in government spending on higher education was an end to basic economic growth. Real average earned income simply stopped growing in 1975, and was lower in 1983 than in the mid-1970s. *This was not a recession phenomenon.* Enormously increased pressures continued, however, for public support for those who were not income earners, or who had low or impaired income-earning ability. The size of these groups of people have grown enormously: the unemployed, the poor, the elderly, the sick and disabled, and students. Partly compounded by the deep 1981/2 recession, and the unusually slow subsequent Canadian business-cycle recovery, governments have unexpectedly found themselves confronted by unprecedented deficits and growing financial and economic pressures for fiscal constraints.

Against the background of low economic growth and rising conflicts over the distribution of real income among various groups in the society, questions about university financing are sharpening and becoming more complex.

Is the Ontario university system really experiencing such severe financial strains that these are posing serious potential threats to its quality? Has government 'financial squeezing' of the universities been a deliberate, temporary phenomenon, perhaps with various purposes in mind? Some of the reasons could have been: to force greater efficiencies, to eliminate perceived duplication and waste, and to improve cost management in the wake of the big financing surge during the 1960s and early 1970s; and to encourage more careful and disciplined approaches to the determination, both within universities and among them, of programs and enrolment levels eligible for government funding.

Or is the constraint on government funding going to be a more permanent feature of policy? In this case, more severe and difficult controversies would undoubtedly arise, in structural, fiscal, and constitutional terms, between provincial and federal governments in the division of government financing for universities. If such more permanent fiscal constraints persist, would there be serious risks of losses of excellence and increased mediocrity in the Ontario-university system?

If government 'hold-the-line' fiscal policies continue, what are the options for at least some significant degree of a return in university financing to greater dependence on private sources of financing? Among such sources are: increased tuition fees (possibly not only between faculties in any given university, but also among universities); the development of much more effective efforts to solicit funds from alumni and other private donors; and the expansion of mutually advantageous linkages between business firms and university organizations (such as research grants, special research institutes, joint ventures, exchanges of students and faculties, etc., as outlined in the 1984 report by Maxwell and Currie prepared under the auspices of the Corporate-Higher Education Forum).

Tuition fees

Although there is currently strong opposition to increased tuition fees in some quarters – especially among students and faculty members, most of whom appear to look strongly to stepped-up government funding – there is also a wide body of opinion that student fees should rise. But the latter views insist that any such rise must not be an offset to reduced government support, but to give universities more room for manoeuvring in their operations. Among the various reasons cited for such views are: (1) that fees, as a proportion of university operating costs, appear to have fallen to approximately half the ratio of 15 years ago (now about 15 to 16 per cent); (2) that the average fee at an Ontario university has fallen even more rapidly as a ratio of average starting salaries of graduates (Waterloo cites a ratio of less than 5 per cent); and (3) that these changes are implying a questionably high rate of intergenerational transfer from the taxpayers of today (with the bulk of all taxes coming from individuals with only modest to medium incomes) to potential high-income earners.

There are, of course, wide variations in views about what should be the extent of any such tuition increases, the timing and phasing of them, and the extent to which there should be autonomy within universities and between universities to implement them. Also, most proponents argue that to avoid any serious risk of financial elitism with respect to university access, corresponding improvements should be instituted in student financial-aid mechanisms such as guaranteed loans, at least partial grants, and/or more bursaries.

In the context of tuition fees, there is a further issue that might be raised – namely, that as a matter of both human investment and equity, high-school graduates who do not go on to postsecondary education might receive a first-year subsidy for on-the-job training in place of the subsidy they would have received if they had enrolled for educational training in a university or college. (This issue has been explicitly raised in Davies and MacDonald 1984).

Private donations

With respect to increased private donations, these could conceivably provide some measure of added private financing. But two constraints are frequently cited: the disincentives for donations in an environment that has encouraged a widespread belief that most individuals are already contributing significantly to university funding through the tax system; and the lack of strong, dedicated, and effective solicitation programs by many universities, in contrast with the much more expert, efficient, aggressive, and sophisticated efforts of U.S. universities. This is especially true of the large, private U.S. universities.

The university-corporate linkages for deriving greater private support for universities is a potentially promising field. Ontario universities are still at a rather primitive stage in this area – especially in comparison with the many leading edges of U.S. experience and accomplishment. A notable current exception is Waterloo University, about which much is now being written and articulated. This issue brings up some difficult and controversial matters. There are some serious questions about the elements of compatibility between university cultures and corporate cultures. There is also the basic question about whether, under today's rapidly changing industrial and social conditions, significantly growing elements of mutual advantages between these previously more insulated and isolated types of organizations can be discovered, explored more carefully, and implemented. Even beyond this issue is a still newer one – namely, whether a wide variety of research and new technologies can be cultivated and developed within universities in entrepreneurial ways. This would allow universities to be able to become income-earning, marketing organizations to sell, license, and derive royalties *for the universities* from the inventive and innovative talent being deployed within themselves.

These are only a few, selected, and perhaps even rather simplistic issues regarding university financing. What does appear to be clear at the present time is that the system must continue for the foreseeable future to be primarily dependent on government financial support, that increased tuition could become over a few years an important supplementary component, and that other private financing (even if it is pursued with vigour and imagination) is likely to be, even at best, a worthwhile, but not very commanding, adjunct to the 'basics' of university financing.

However, two other significant points about adequacy and allocation of university funding are important. There is a considerable body of opinion that believes that universities cannot be (*and should not be*) institutions that are operated on 'bottom-line financial measures'. However, there are also widespread views that there is scope for improved administrative efficiencies, tighter cost-management decision-making, and at least some measures of specialization and concentrations of resources in respective fields of comparative advantage and in centres of excellence. In other words, there are opportunities for 'doing better jobs with what they've got', especially at a time of growing financial constraints. Moreover, this could be done without any disregard for the maintenance of – indeed, it is fully compatible with further improvement in – quality, accessibility, and other related issues.

The second point is an even more serious concern. It arises from the fact that capital spending on structures, including particularly the maintenance and repair of existing structures, has been so severely curtailed in Ontario since the early 1970s, that there is no real doubt that the quality of university 'plant' is deteriorating. One may not agree entirely with the accuracy of the capital-investment analysis and data in the brief of the Council of Ontario Universities, but one cannot evade the conclusion that the Ontario government, since its severe curtailment of such spending over the past decade, is now allocating to university building maintenance and repairs only a small fraction of 1 per cent per year of the current value of the capital stock of Ontario universities. We are thus accumulating a growing, and potentially very threatening, need for some future 'very large bills' for structural restoration and maintenance. Generally, universities 'expense' their capital-investment spending (partly on the basis of urgent and special applications for government financial assistance); they generally do not develop and carry depreciation reserves. Nor is the private sector likely to be a primary source for meeting the accumulating university-plant deterioration. Most views agree that government is in the process of building large future liabilities for university capital needs. Certainly, the anecdotal stories of structural deterioration in Canadian universities are now multiplying rapidly.

One added point (discussed further below) is that universities also appear to be in the very early stages of massive increases in needs for equipment (not just in engineering, computer, medical, and other more clearly identifiable fields of rapidly expanding technology, but also throughout many traditional faculties not previously regarded as 'high tech'). This issue poses emerging, new, and urgent further questions about the 'capital intensity' of universities – again, with far-reaching implications for financing, as well as for other basic issues, such as quality, accessibility, and specialization.

ACCESSIBILITY

Ontario has deliberately built, as a matter of policy, a very open and accessible system for both young people and adults to gain entrance to universities (and other postsecondary institutions) for all qualified students. This policy is clearly reflected in the sheer magnitude of the system that was built in the 1960s and 1970s. It is likewise reflected in the containment of tuition fees to low (and *relatively declining*) levels. It is reflected in the decisions to move aggressively into regionalization of the university (and college) system in order to minimize the costs of student mobility to more agglomerated areas of institutional concentration among the major, established universities. And it is a policy frequently articulated in public statements of leading government authorities. In other words, the present university system has been profoundly influenced by social, regional, economic, and political considerations.

But as the system has come under increasing financial strains in recent years, many new questions about accessibility are surfacing. Accommodation of qualified students to both universities and programs of their first choice have necessarily had to be curtailed.

At least seven basic issues are troubling, in this context:

1 Is basic accessibility being eroded? From various perspectives, the answer is clearly 'yes'. Many universities have, for physical and financial reasons, had to escalate the 'entrance quality' of students to their institutions, and especially, to many of their faculties. Among other things, first-year applications to universities are on a steep upward course, in part because more and more potentially qualified entrants to universities are rapidly broadening the number of their applications in search of some 'university berth' to which they wish to aspire.

2 Systems for helping to 'screen' the quality of applicants are in a state of some disarray, as universities are using different criteria for triggering acceptance of applicants.

3 As the system appears to be tightening on accessibility, an understandable shift has occurred, in various ways, to develop more effective 'screening systems' between universities and between faculties. This has created a shifting and confusing set of patterns for all involved. Thus, a clear issue has emerged as to whether, despite all of their limitations and deficiencies, a more standardized test, or sets of tests, should be instituted – for example, either by reinstituting a province-wide, end-of-secondary-school 'exit exam', or perhaps a collectively-agreed-upon basic set of university-entrance exams established by universities.

4 Will increased tuition fees, even if supplemented by strengthened student-aid measures, actually act to restrict accessibility for intellectually well qualified students?

5 Will erosion of accessibility to universities be accompanied by greater accommodation of unsuccessful university applicants to the community colleges? Or will such a 'diversion' of students imperil, in

complex ways, the access of well qualified students to the technical-skill training that these institutions were originally primarily established to provide (and for many of which there could well be strong future employment needs)?

6 There are also troubling and unresolved issues about the terms and conditions affecting accessibility to universities for mature adults, many seeking part-time access, and an increasing number needing re-education and updated education in a world of accelerating growth of knowledge and technology. In today's conditions, a shrinking proportion of the employed can count on a lifetime career without new learning and retraining. A rising proportion will be facing accentuated job competition from newer university graduates whose education will have brought them closer to the frontiers of new knowledge, skills, and thinking.

7 At the same time, there are interesting speculations that 'distance education', encompassing what are perhaps still early and primitive forms of computer-based instruction and instructional television, could immensely enhance accessibility to university education. But it is still far from clear as to what the quality-cost-accessibility relationships may really turn out to be in the evolution of such new educational technologies.

QUALITY

Ontario must strive for 'world class' in its university-education system. This means, among other things, world-class students, teaching, research, and university administration – frontiers of excellence that are regarded, not merely in Canada, but internationally, as outstanding and prestigious.

According to various reliable sources, Ontario – in fact, Canada as a whole – does now have an outstanding international reputation for good quality university education, and, in some institutions and fields, a superb reputation.

Really high quality university education cannot be established or imposed by any fiats or directives. Nor is it very easy even to 'buy it' with financial resoures. Success lies in its *cultivation*, usually over fairly long periods of time. To build a great university or a great faculty is a process involving inspiration, dedication, discipline, and long-term commitments. This is a process that requires decades, not years. A great university or faculty gathers gradually an 'aura' that enshrines it with favourable peer evaluations. Also, once achieved, such greatness is not usually quickly eroded, even when it encounters adversities or even bad management. It is important, of course, to recognize that it is difficult to *maintain* high quality. But there is a 'virtuous circle' of favourable factors that can work together to help in such maintenance: good administration attracts good faculty; good faculty attracts good students; good faculty and good students invite and promote good research endeavours; good overall performance tends to be bonused by stronger financial and community support.

Critical to the achievement and maintenance of this high level of quality must be a public awareness of its importance. In brief, this is not just a 'university affair'. Disciplined and dedicated students, clearly recognizing that learning is a tough and demanding 'occupation', are as important as disciplined and dedicated faculty members and administrators. In Canada, with its very high degree of government involvement and support for universities, the same acute awareness of the critical importance of quality must also steadfastly prevail.

Now brooding over Ontario is a concern that the achievements that have been made may be threatened by many factors, not least of which is the concern over adequate university funding. But this should not be given undue emphasis in relation to the many wide-ranging and complex issues that influence quality. For example, do relatively rigid structures of universities – in such terms as departmental prerogatives and conflicts, widespread entrenchment of tenured faculty, highly democratized systems of budgeting and administration, inter-university rivalries and jealousies, etc. – all make it more difficult to build or maintain 'centres of excellence'?

Nor is there, perhaps, any less concern that governments may seek quick pathways to create excellence. Quality grows not only where it is nurtured, but even more importantly, where it nurtures itself.

Thus the quality issues about university education in Ontario intertwine themselves not only with issues of funding and 'management of the system', but also with accessibility, specialization among institutions (or 'rationalization'), instructional technological changes, regional matters, and other issues.

Also, totally fundamental, is the fact that quality is what other peer bodies and groups really perceive quality to be.

But there are two basic aspects to quality that must be given high priority in any future re-orientation of the Ontario university system. The first is that because of the increasing 'interrelatedness' of knowledge in many fields, Ontario must preserve a university system that ensures capabilities for interfaces on the frontiers of new knowledge – for example, that engineering is adequately interlinked with new frontiers in electronics, chemistry, physics, genetics, etc. The second is that specialized centres of excellence must be encouraged to take root and continue to develop into highly specialized faculties and centres of learning.

SPECIALIZATION AND DIFFERENTIATION

The theme of specialization and differentiation both within and among Ontario universities is currently one of high public profile and interest. The underlying concern is that wasted effort and resources are being gobbled up because too many universities are trying 'to be too much for too many people'. There is great attraction to the concept of 'rationalization', specialization, and the accompanying economic precept that there are 'efficiencies in specialization and scale of activities'. For the past decade or more, there have been deep debates within universities, between universities, in government, media, and other circles about excessive proliferation and duplication of university activities. Anecdotal stories are widespread. Polemical arguments about university specialization and differentiation have been frequent. These issues have emerged as a key area of the terms of reference of the Bovey Commission.

However, these are issues that are deeply troubling to all the people of Ontario who think carefully and thoughtfully about the future of its university system. It is too easy to come to think that there are clear and definitive methods to achieve better specialization, differentiation, concentration, and rationalization. Even the Council of Ontario Universities once thought that it could help to advise about how best to co-ordinate the Ontario university system. But in the past decade it has abandoned the position that such a voluntary and collegial group could play an effective role in such efforts. So many issues remain as burning ones to be addressed. The questions about 'building on strengths', 'eliminating weaknesses', and allocating responsibilities with respect to scope of functions and curricula, changing needs for professional educational schools, divergent roles of regional university complexes, etc., etc., are still very vibrant.

Three basic underlying factors complicate any answers to these questions:

- politics
- the scarcity within universities of any real Darwinian sense of evolution in education; that is, of any effective and coherent appreciation within these institutions that successful evolution inherently requires processes of birth, growth, maturity, senility, and death
- the simple human aspiration to 'protect turf' (the territorial imperative).

But the issues of specialization and differention are real, and they will not go away. They probe deeply – and ask more fundamental questions – for what? by whom? and who decides? Also, there is the issue as to whether specialization and differentiation will produce a more efficient allocation of resources – that is, economic savings – or, on the other hand, whether they may tend to impair excellence. The probabilities are that any cost savings would likely be small, but that more specialization and differentiation would foster quality and excellence.

TECHNOLOGY

Technology and education is a multi-faceted issue, especially in today's world of accelerated growth in technological knowledge and expertise. The issues, here, pour out. For example:

- Can universities continue to turn out technologically advanced and sophisticated graduates to meet potential needs in our changing economic, social, political, and cultural system?
- Can they attract and hold many of the best minds in their faculties (and not merely in the science and technology faculties) in an age of increasingly aggressive competitive pressures for recruitment of brainpower in other sectors of the economy?
- Can we count on enough tough and disciplined and highly dedicated student minds to deal effectively with the growing intricacies and

demands wrought by rapidly changing technology?

– Can the universities develop and use new information, communications and other technologies effectively to improve the range of quality of university instruction?

– Can we even afford to pay, as a nation, and relatively quickly, the large costs involved in a major expansion of 'distance learning' and still more basic approaches to 'electronic learning'?

– Can we equip our universities fast (and over many different faculty areas) with up-to-date equipment (especially electronic and telecommunications equipment), and keep them up-to-date, even though such equipment may experience rapid obsolescence and need relatively quick replacement?

– Can we effectively marry some of these new technological developments with associated improvements in communicative skills? The discovery of new knowledge without the ability to communicate it effectively is of little value.

There are important issues here that need to be seen in proper perspective. One of them is that, according to the best analysis now available, *neither high-technology industries nor high-technology occupations will create a substantial proportion of the new jobs we need over the next 15 to 20 years!* But without good high-technology university training, we may lose many more jobs than we might have had. And those who emerge from universities with high-technology skills and knowledge will help to create, indirectly, many jobs that would otherwise not have been available.

Another extremely important issue is that *the educational system itself is likely to be more affected than most other parts of the economy by the electronic revolution of the next decade or two.*

Gross investment in instructional (and research) technological equipment in the universities will undoubtedly explode from its present very limited base to many times its current levels before the end of this century, as technological progress demands a swift expansion in a technologically literate workforce. Moreover, advances in technological literacy will be needed not merely among younger people, but also for vast numbers of adults if they are to function effectively and productively in an environment of rapid change. Still further, there will not only be the *pull* towards such technological investment in education from employers, but also a powerful *push* towards it by rapid advances in new forms of instructional technology that will be deployed in pre-university and pre-college education.

IMPLEMENTING UNIVERSITY CHANGE AND REFORMS

At one time, Ontario universities, operating under their respective charters, were almost totally autonomous institutions. They still retain remarkably high degrees of autonomy. But it has been inevitable that, as government moved to provide an overwhelming proportion of the financial resources for universities, and as an Ontario university *system* began to emerge, the autonomy of individual institutions could not remain as large as it once was. As Principal Corry of Queen's University once said in a private conversation with the author, 'it is difficult to keep one's distance from government when one has one's hand so deeply in the government's pocket'.

So long as rapidly growing resources were flowing to the universities, constraints on university autonomy appeared to be fairly minimal. But, under the developing conditions of financial constraints, growing concerns have emerged about how – and by whom – adaptation and adjustment will be accomplished.

In this context, issues are arising about four major focal points that will be involved in implementing adjustments and reforms:

University administration. The central question here is, 'How effectively can university administrators act within their own institutions, and in co-operation with each other, to *continue to develop* a very high quality university system in Ontario, in the context of the many complex issues outlined in this paper?'

University governing bodies. Are there real possibilities for members of university governing bodies to play much larger, more informed, and more decisive roles in facilitating adjustment and reform, both within the institutions they serve directly, as well as in the context of the broader inter-institutional system?

Government. The terms of reference of the Bovey Commission clearly imply a substantial degree of government involvement in bringing about change and reform in the Ontario university system – perhaps by legislation, certainly by various regulatory and control mechanisms and, of course, centrally, through decisions about the levels and allocations of financial support for universities. But there are many sensitivities about the role and capacities of government in relation to reforming the system, given the bewildering infinitudes of issues that shape its structure and performance.

Interface bodies. The terms of reference of the Bovey Commission include a mandate 'to consider the need for mechanisms for regulation, co-ordination and the provision of advice to the Government, and in particular to clarify the role of the Ontario Council on University Affairs in the context of a new and differentiated university structure (Bovey Commission 1984, p. 28).

This government-appointed Council has been operating (with a very low profile and visibility) as an advisory body to the Ontario government on overall university policy, covering such matters as funding levels, the distribution of funds, tuition fees, and student assistance.

An important issue is whether the role of this Council should be strengthened and extended. Should it still remain as a purely advisory body (or 'buffer body' as the Council of Ontario Universities terms it)? Or should it be reformed more fundamentally (or replaced or supplemented by some other body) to develop – perhaps in some more closely linked institutional structure with government – towards a more quasi-decision-making body? Should it also be more closely linked to universities and other educational bodies? Many possible roles might be considered. Perhaps one illustration will suffice, to encourage thoughts in such new directions: could this be a vehicle through which capital allocations could be made to universities, on the basis of proposals submitted to it, and after careful appraisal of all relevant considerations (technical as well as academic)?

CONCLUSION

This overview paper has necessarily been confined to only a small selection of issues and questions that are now crowding upon us in anticipation of major changes in Ontario's university system over the next decade and beyond. It makes no claims either to comprehensiveness or a carefully balanced discussion of priorities. Its sole purpose has been to raise issues – some of them highly controversial and provocative issues – to provide an initial base for the conference on Ontario universities sponsored by the Ontario Economic Council.

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Submissions to the Bovey Commission: a summary

Alekos Athanassakos, Douglas Crocker, Kevin Dowd, and Jacob Levenstein

In January 1984 the government of Ontario set up a commission under Mr. Edmund Bovey to consider the future development of the universities of Ontario. In June 1984, the commission published a preliminary report entitled *Ontario Universities 1984: Issues and Alternatives* and invited all interested parties to make submissions. Our paper provides a brief overview of these submissions in sections covering the main issues they address – the role of universities, quality, accessibility, adaptability, balance and differentiation, funding, and inter-institutional planning and co-ordination. As these issues are all interrelated, there is a certain amount of overlap between various sections of this paper.

The purpose of the paper is not to provide a detailed account or analysis of all the submissions, but to give a general impression of the main points they raise. Readers interested in more detail should refer to the Bovey Commission's final report that was released in December 1984 and entitled *Ontario Universities: Options and Futures*. An extensive list of the written submissions is included in the appendix to this paper. (The list also includes abbreviations of the names of the submittors that appear in this paper.)

THE ROLE OF UNIVERSITIES

The set of questions asked in *Ontario Universities 1984: Issues and*

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Alternatives (OU) by the Commission on the Future Development of the Universities of Ontario (Bovey Commission) in June 1984 is prefaced by a request that each of the Ontario universities, Ryerson Polytechnical Institute, the Ontario Institute for Studies in Education, and the Ontario College of Art submit along with their briefs a profile on the specific role and the distinctive character of their institution. In addition, they were asked to identify areas that should be designated for either development and expansion or elimination and contraction.

It is, of course, impossible to outline here precisely what each university perceived its role to be and still maintain the general purpose of this paper, namely, to summarize the submissions to the Bovey Commission. We will instead present a general picture of what the universities overall appeared to perceive their objectives to be. This picture will then be re-presented from the points of view of the university's two major interest groups, the faculty and the students.

University submissions

Fundamentally, universities appear to see themselves as separate communities dedicated to the acquisition, preservation, and transmission of knowledge. These objectives dictate that the universities must be simultaneously involved in both research and teaching. Universities perceive research to be devoted to the creation of knowledge and teaching as a means of transmitting knowledge.

In large measure, these two pursuits are mutually compatible and universities are eager to accept both responsibilities. There are, of course, differing degrees of emphasis placed on either teaching or research by each institution depending on the particular role it has adopted for itself in Ontario. However, there is a general recognition that good teaching can only be achieved when a strong research program is pursued and conversely, that teaching is a necessary ingredient for a strong research program. Speaking on behalf of the Ontario universities, the Council of Ontario Universities (COU) says in its brief to the Bovey Commission that 'separation of research activity from teaching is not consistent with the role of the university' (COU, p. 36).

There also seems to be fairly general agreement on the best method of delivering the universities' product: support must be continued for the broad spectrum of undergraduate courses offered by each of the universities in Ontario. The universities feel that a well-educated populace provides many benefits. Among such benefits are those cited by the University of Western Ontario (UWO, p. 28), namely 'the ability to understand and use the English language at an advanced level . . . the ability to define and analyze problems. . . [and] advanced understanding of at least one discipline in the humanities, sciences, or social sciences'.

In general, traditional faculties are commended as the best vehicle for the teaching of advanced material. Further, graduate programs are seen as a valuable conduit for both the transmission and creation of knowledge.

Ontario universities feel they can make an enormous contribution to the challenges arising from the

> accelerating pace of scientific and technological change. Research is an essential key to successfully meeting these challenges. A high proportion of the basic and applied research conducted in Canada is done in universities. Ontario universities represent over 40 per cent of Canada's university research capacity. Through their doctoral programmes they also provide half of the researchers currently trained in this country. (COU, p. 1-2).

Finally, the universities believe very strongly that they are a benefit to society. A majority of the institutions noted their important contributions to society and/or the economy. In addition, several felt they played an important role in developing and promoting the region in which they were located. For example, the brief by the University of Windsor says:

> The University firmly established itself in the City of Windsor (it is now the city's fifth largest employer) and in the surrounding tri-county region . . . It is trying in its laboratories to keep the waters of the Great Lakes alive and to lend a hand in the preservation of the auto industry in Canada. It offers to thousands of young men and women, mostly from this region, but some too from far away places in Africa and Asia, the chance to become useful, well-rounded, educated persons, and it offers an opportunity, too, to older men and women, some of them already senior citizens, to attend a university at last, whether to get a long-delayed degree or just to occupy the

> last, whether to get a long-delayed degree or just to occupy themind with new ideas and experiences. If there were no University of Windsor, if it did not have the scope and variety to offer that now characterize it, most, perhaps all of these functions would go unfulfilled. (University of Windsor, p. 29)

This is perhaps the key to what the universities of Ontario perceive they do. They offer Canadians the chance to learn, and they offer Canada the chance to adapt to a rapidly changing environment.

Faculty-association submissions

The faculty associations' perception of the role of universities does not differ substantially from the picture outlined above.

The Ontario Confederation of University Faculty Associations (OCUFA) brief begins:

> The university is a unique social institution. Its mission is to preserve, generate and transmit knowledge. Its primary activities are teaching and research. These activities are interdependent. In addition to their own intrinsic value in generating and transmitting knowledge, they enable the university to serve as social conscience or critic of society, and as a preserver of the social and cultural heritage.
>
> Although unique, the university is still a social institution, and like all institutions has a role to play in the economic life of this province and of the nation. We in the university community are never unmindful of that. We see that our economy will continue to be resource-based, but we also see the crucial role of all other commerce. If the nation is truly to attain a preeminent position in the world, then it must consider seriously all the possible futures. We do not believe it can be said with any certainty what the 'new economic order' will be, nor how rapidly it will evolve and change again. We see many futures and we do agree that technological change and the explosion of information will affect all of us and all that we do. The university's mission will be affected in two ways: by the responsibility of preparing future generations to live in and evaluate such a society; and by the impact of the information revolution on the generation and transmission of knowledge in all fields. (OCUFA, p. 1-2)

Student submissions

The submission by the Canadian Federation of Students–Ontario (CFSO) suggests that

> the attributes of a university include:
>
> 1 To preserve and advance knowledge and culture, including the development of new values in the context of a changing society;
> 2 to be critics of society and have the power to criticize and dissent from the accepted norms of society;
> 3 to disseminate this knowledge and culture to its student body and to the wider community in an open manner;
> 4 to provide the opportunity for the development of individual talent so that graduates will play a vital role in the improvement of our society;
> 5 to enhance the social benefits derived from a better educated populace;
> 6 to provide the highly educated and trained human resources for economic and social development, including the development of professional manpower; and
> 7 to conduct basic and foundational research in all disciplines and areas of intellectual endeavour, as well as integrating this new knowledge through applied research that conforms to established university policies and standards. (CFSO, p. 13)

Other submissions

Due to the large number and diverse nature of the remaining submissions, it would be unfair to try and generalize the perceived role of universities held by this category. For all the remaining issues, however, these other submissions are discussed.

QUALITY

The Bovey Commission refers to 'the need to maintain and enhance quality' as a matter of 'the highest priority for both universities and Government' (OU, p. 8). Accordingly, the Commission set out six questions designed to help evaluate the current quality of undergraduate education, professional programs, graduate education, research and development, and service. The questions largely relate to the measurement of quality and to methods of increasing quality through alternative uses or reallocation of funds, and particularly to whether new information and communications technology could increase quality.

University submissions

The COU says:

> Despite the centrality of high quality academic programmes and research to the mission of universities and the excellent reputation of Ontario universities, the quality of the university enterprise is now seriously threatened. In the case of undergraduate programmes, including some professional programmes, the quality has substantially declined. The explanation lies in the drop in provincial financial support over a period which saw a dramatic rise in student numbers, accompanied by only a modest increase in faculty positions. The decline in the quality of university education in Ontario is most evident in the universities' deteriorating physical plants; in the student:faculty ratio as it affects class size, laboratory sessions, essay and exam reviews, counselling; in outdated library collections; in pedagogical and research equipment that is not 'state of the art'. (COU, p. ii)

With regard to new information and communications technology, the COU reports:

> The Commission is properly concerned with questions about how the resources made available to universities might be employed with maximum efficiency and effectiveness to enhance quality, and inquires whether new information and communications technology might serve this purpose . . . The general response is that the new information and communications technology can improve the ability of universities to meet the needs of students, especially part-time adult students and those who reside at a distance from campus; and that increased use of this technology can improve the efficiency and effectiveness of the educational services provided. Since the delivery costs of such services are high, however, the extension of this approach is not likely to result in substantial cost savings. (COU, p. 9)

The COU also cautions that technology is not an effective substitute for personal-contact teaching, which is necessary when quality is a primary goal.

The submissions by the individual universities are in general agreement with the COU positions. All suggested they were operating at either full capacity or above capacity and felt that the quality of their education services was declining or would decline soon. The University of Western Ontario suggests that enhancement of system-wide quality 'depends first on the establishment by government of a coherent policy framework for the university system' (UWO, p. 17).

There are some divergent concerns amongst the universities on the role of specialized, designated-purpose institutes. The University of Waterloo reports that institutes whose purpose is designated by the province would be less preferable to institutes created internally in recognition of demonstrated strength and achievement (UW, p. 8). Brock University is concerned that funding for the specialized institutes would be drawn from the already diminishing total amount available, and that such centres would be created 'at the expense of the core which has already been severely eroded – a core whose solidity is essential for the long-term maintenance of the more peripheral institutes' (BU, p. 12). Lakehead University adopted a similar position, stating the need for 'various regionally-inspired institutes'. However, in the University of Toronto's view,

> a centre [of specialization] or [designated-purpose] institute would only – could only – achieve the standard of excellence sought by the Commission and the Province if it is built upon the strengths in the associated academic disciplines. This means that they should not be created according to criteria such as a need for regional distribution. (U of T, p. 60)

Faculty-association submissions

The Canadian Association of University Teachers (CAUT) submission stresses the harmful effects of underfunding on the ability of the university system to adapt to its changing environment. The issue of quality figures very prominently in many of the faculty-association briefs. These submissions include many examples of the ways that the quality of university education has been compromised or threatened.

For example, the submission by the University of Western Ontario Faculty Association states:

> On the issue of 'Quality' there is evidence that quality at Ontario's universities has already been compromised. The overcrowding in classrooms has been well documented by the press. In addition, at least in science courses where intensive instruction in the use of equipment is involved, there is some evidence that quality of education has declined. An investigation of thirty such courses at UWO over the past five years reveals that as the class sizes doubled, or even quadrupled, the percentage of students obtaining grades of B or higher decreased significantly, from about two-thirds to less than half, and this was during a period in which entrance requirements increased! This may well reflect the fact that in such courses large numbers of students can only be taught in several small groups which therefore increases the number of hours of instruction. Much of this, of necessity, is entrusted to graduate student assistants because there is an insufficient number of professors available to instruct for all the additional hours required (p. 5-6).

Student submissions

The submissions by the different student associations and groups all recognize that quality has declined. In their opinion, this is manifested by higher student/faculty ratios, inadequate libraries, reduction of tutorial hours, elimination of courses, lack of equipment, etc. The students believe that the problem is one of a lack of funding. They do not see any conflict between quality and accessibility provided funding increases.

The student associations are all against distance education if it is viewed as a substitute to on-campus teaching. They support instruction by technological means only as a complement to on-campus teaching and to increase accessibility to those students in remote areas where there are no campuses. Northern students want professors to fly to areas without campuses. When this is not feasible, they want a two-way television system to be put in place.

Other submissions

The submissions from the business organizations argue that the universities should concentrate on producing high-quality graduates. The Electrical and Electronic Manufacturers Association of Canada (EEMAC) feels quality could be improved by exposing each student to areas of study outside their main interest. Thus, for all programs, it suggests that certain arts and science courses should be made mandatory. In addition, it notes that quality in the applied-sciences courses could be improved by ensuring that both students and faculty pick up some practical experience.

The Ontario Federation of Labour (OFL) would like to see distance education centralized into one Open University of Ontario. This would bring together the 'hodge podge' of largely uncoordinated programs that now exists, eliminate the physical barriers to education, and integrate the education process itself with people's lives in their communities. This position is also supported by the Ontario Association for Continuing Education (OACE).

ACCESSIBILITY

Current enrolment is at an all-time high. This has revived concerns about Ontario universities' ability to handle all the qualified individuals the secondary-school system can produce.

> By the fall of 1983, most universities, some for the first time, had established limits on admission to first year in all programs. Consequently, the issue of accessibility (were qualified applicants being denied the promised opportunity to enter university?) has become prominent and hence the [Bovey] Commission will examine the entire issue. (OU, p. 9)

The set of questions posed by the Bovey Commission is indeed wide. Expressed is a desire to know the socioeconomic factors affecting enrolment levels as well as academic standards regarding access to general programs, professional programs, or postgraduate programs. The Commission is also interested in the role that institutions should play in matters concerning regional access, access by part-time students, franco-Ontarian students, the role of legislation in restricting and promoting access to certain fields of study on the basis of manpower studies and future expected demand, and admissions requirements.

University submissions

The COU feels that:

> Fiscal restraint has virtually eliminated the universities' capacity to absorb further enrolment growth. While endorsing the principle of broad accessibility, Council's major concern is that this should mean access to an education of quality. In reviewing admissions policies in the context of high demand for a limited number of places, the question may be raised whether generally accepted admissions requirements continue to be relevant. The use of standardized achievement tests in English (français) and mathematics at the school leaving level to complement Grade 13 marks, still the best indicator of future university performance, would provide a basis for more equitable decisions on admissions and scholarships. But this would not address the fundamental policy questions about accessibility. It is widely recognized that because of socio-economic and attitudinal factors, not all Ontario residents with the intellectual capacity to profit by university study apply for admission to university.
>
> Although a strong case can be made for a higher participation rate, without increases in funding and in institutional capacity future enrolment is unlikely to rise above present levels, regardless of an increase in demand for places, or changes in the structure of Ontario secondary education such as the compression of five years into four. Enrolment planning must, then, continue as a major priority for Ontario universities. Council also recommends a review of policies concerning the desirable number of international students in undergraduate and graduate programmes, and stresses their importance both in the maintenance of quality in such programmes and in Canada's future trading relations. (COU, pp. ii-iv)

Regarding access to graduate studies, the COU says that the system is adequately accommodating current demand, but that factors other than those considered in general admissions are important. In some cases, the provision of scholarships and research funds, and not the number of spaces available, is the limiting factor. The COU feels that it is 'essential that a broad base of support for the universities' graduate and research programmes be maintained' (COU, p. 17).

Finally, it says

> universities have the responsibility to establish admission requirements and enrolment limits on the basis of their own judgments of the numbers they can appropriately educate, given their instructional and research commitments and the resources available to them to meet these commitments. It therefore supports the decisions of member institutions to limit overall enrolment to the extent necessary to maintain the quality and integrity of existing programmes, even if this means that some qualified applicants are refused admission. Without increases in funding and in physical capacity it is unlikely that universities will expand enrolment much beyond current levels. (COU, p. 25)

The majority of the comments made by the COU are supported in the individual briefs submitted by the universities, who all note that admission to almost all first-year programs is restricted in some sense. They also suggest that they could not, with current funding levels, admit any more students without adversely affecting quality of education. The University of Waterloo indicates it would definitely prefer to make the admission process more selective in the expectation that a higher proportion of those admitted will graduate (UW, p. 9). Some other universities, such as Lakehead University, would prefer 'an approach which would allow for generous admission with in-course screening' (LU, p. 70).

Many of the universities feel part of the problem has arisen because of 'mark inflation' within the secondary-school system. They advocate a return to a province-wide standardized examination which 'should be designed as preparation for university specifically and exclusively. The preparatory and selective capabilities of these courses will suffer if they are designed to serve multiple purposes' (U of T, p. 67).

There is disagreement among universities regarding the issue of regional universities and accessibility. Lakehead, Windsor, Brock, and Laurentian all believe that part of their *raison d'être* is to ensure a regional access to higher education. But other universities, such as Queen's, the University of Toronto and the University of Waterloo say that the majority of their students come from outside their region. The brief submitted by the University of Waterloo went on to state that 'the notion of regional universities is terrible' (UW, p. 10).

Faculty-association submissions

Both OCUFA and CAUT forecast that enrolments are likely to increase in the near future. OCUFA points out that although the 18-to-24 age cohort may decline in size, there will be increasing numbers of mature students.

OCUFA is also concerned that financial pressures have forced universities to raise admission standards and that this is depriving many otherwise qualified students of the chance of a university education. OCUFA argues that access to Ontario universities should be maintained or increased for the following reasons:

> – because a democratic society needs an educated populace;
> – because a socially elitist system is out of step with our needs in the future;
> – because restrictions on access threaten specific groups who have been disadvantaged in the past;
> – because restrictions on access fly in the face of significant social trends such as equality of men and women, changing patterns of work and leisure, changing family relationships;
> – because restrictions on access are detrimental to the quality of life in Canadian society;
> – because restrictions on access impede economic development and technological innovation and diffusion. (OCUFA, pp. ii-iii)

This recommendation is echoed by Carleton's and Queen's faculty associations. The University of Western Ontario Faculty Association's brief also points out that too much reliance on tuition fees as a source of revenue could harm access and make the system elitist.

Student submissions

The students' position is that universal accessibility should be maintained. They claim that any qualified student who wants to enter a university has the right to do so. They add that transferring the excess demand to colleges of applied arts and technology (CAATs) is totally unacceptable, since the CAATs are already overcrowded. Although most want admission requirements of a 60 per cent grade-point average to be maintained, the Wilfrid Laurier University Students Union members 'do not object to an increase in the admission as long as it does not go over 70 per cent' (WLUSU, p. 8).

The student associations urge the Bovey Commission to encourage higher participation rates by advocating the removal of financial and sociocultural barriers, and a capacity able to meet the demand. They call for special attention to be given to the handicapped, women, Northern students, and francophones. However, they are against the idea of sending all handicapped students to just one specially equipped university. This would, as one consideration, make it easy for businessmen to identify them and therefore to discriminate against them.

With regard to province-wide admission examinations, the CFSO doubts the reliability and validity of such tests, noting that:

> The Commission has asked whether standardized testing might be a valid way of determining a student's ability and achievement. Examined in a multitude of ways, and compared to high school marks and a teacher's assessment as predictors of future achievements, it appears that it is not. (CFSO, p. 116)

Further, they urge the Bovey Commission to support the abolition of differential fees for foreign students.

Other submissions

The OFL, the Labour Council of Metropolitan Toronto (LCMT), and the Canadian Union of Public Employees (CUPE) are strong supporters of universal access by all qualified individuals. In addition, the OFL calls for programs that would encourage lower socioeconomic groups to participate in postsecondary education. It proposes a 'contingent repayment plan' in combination with an 'earned entitlement plan' that would ease access for qualified individuals from all income groups, including those who have spent some years in the workforce.

The LCMT says we should reduce the streaming of people from working-class backgrounds into vocational programs that do not allow movement into postsecondary institutions.

The Ontario Teachers' Federation (OTF) recommends that we reduce the number of teachers being trained. In particular, it suggests that faculties of education should adjust their enrolments annually so that the numbers of student teachers enrolled do not exceed the provincially projected requirement for the following school year by more than 40 per cent. The OTF also argues against the reintroduction of province-wide departmental examinations. It says that the classroom teacher should be the prime agent for individual student evaluation.

On the other hand, the business-group submissions stress a need for a more uniform admission standard such as a province-wide examination. The Ontario Chamber of Commerce (OCC) asserts that entry to universities should become more selective but that the province should provide more places in the CAATs.

The Canadian Chemical Producers' Association (CCPA) wants education for industrial employment to go well beyond formal, institutionalized instruction, and states that there is a need for career counselling prior to selection of a university course of study. It advocates co-op programs, but within limits and only for some institutions. Meanwhile, the Canadian Manufacturers' Association (CMA) suggests that co-operative programs such as those at the University of Waterloo can provide permanent employees who are superior performers. The CMA also says that postsecondary institutions have an important role to play in training and retraining programs. It recommends an increase in spending on our engineering schools. This view is supported by the Electrical and Electronic Manufacturers Association of Canada (EEMAC), which would like to see more staff, equipment, and space offered to engineering and computer-science programs.

The Churches' Council on Theological Education in Canada is concerned that theological education is not given its proper status. It proposes that university-level programs in theology should receive a fairer share of government grants. To achieve this goal, it recommends that theological programs be recategorized within the university system.

The Laurentian University Alumni Association is concerned with the level of accessibility of university education for residents of Northern Ontario. It says that it is extremely difficult for a resident of Northern Ontario to leave his job and family to further his studies, particularly at a postgraduate level, at a university in Southern Ontario. It recommends that 'Laurentian must be allowed to maintain, and in many instances, develop and expand further programmes at the undergraduate, graduate and professional levels' (LUAA, p. 2).

ADAPTABILITY

The Bovey Commission invited comments on how Ontario universities could meet the challenges and opportunities offered by 'the newly emerging economic order'. It also wondered how to encourage younger faculties,

> especially when overall enrolment is likely to be static or shrinking [and] given a situation of little growth in numbers and few positions coming available as a result of retirement or other forms of attrition. (OU, p. 14-15)

The Bovey Commission suggested the creation of a special one-time adjustment fund to overcome institutional and funding constraints. The adjustment fund would assist institutions' recruitment of new faculty in areas of expansion, and increase flexibility in their management. The Commission then raised a number of questions about the introduction and operation of such an adjustment fund.

University submissions

The reaction of the COU is as follows:

> The Commission has correctly concluded that adaptability is a major concern among universities. Universities are keenly aware of the need to adapt continuously to changed and changing circumstances. As institutions they are organized for the longer term and quite properly take the long view on matters of policy. They are not opposed to change; nor are they incapable of adjusting to it .
>
> Academic staff are the most essential ingredient in the university enterprise and the capacity of the universities to adapt is related in an unavoidable way to the faculty complement. As has been mentioned, the total number of faculty

> has grown very little in the past decade and the number of new full-time appointments has sharply declined, down by 44 per cent since 1970. The inability of universities to make new faculty appointments deprives them of the opportunity to maintain a proper balance between young and old scholars and researchers. As a result, the faculty age profile has become badly skewed, with a pronounced bulge in the middle and very few at the younger end. More than three-quarters of the faculty hold permanent appointments. (COU, p.28)
>
> The Commission has proposed the creation of an adjustment fund to assist in faculty renewal. COU advocates the creation of an Incentive Fund that would not be used solely to adjust faculty complements, but also to enhance adaptability through modifications to physical plants to adapt to new discipline needs, new modes of instruction, and new relationships with business and industry. Savings which might arise through the application of the fund should accrue to the institutions involved, providing that the new resources could be shown to be intended for the improvement of existing programmes or the creation of new ones, consistent with the institutional mission and system objectives. (COU, pp. iv-v)

The COU also has further suggestions regarding the operation of the fund and its administration:

> All universities would be able to apply for assistance from this Incentive Fund and would be encouraged to do so. The fund would have clearly stated eligibility criteria, but these would be specified broadly to encompass the range of purposes outlined above. In this way, all institutions could expect to receive some assistance from the fund. The buffer body should be responsible for administering the fund and for establishing a proper mechanism for determining allocations from it. Allocations should be made public and expenditures should be publicly accounted for. (COU, p.31)

The University of Western Ontario identifies the major impediments to adaptability as: current underfunding including capital funding; the funding formula; and the unpredictability of funding. This is in minor contrast to the COU position, which identifies staffing as a major problem.

Many other universities adopt a position which straddles both of the above positions. Most see a solution, or at least potential relief, in the Commission's proposal to introduce an adjustment fund. However, Lakehead University

> does not like the idea of such a fund at all, especially if (as seems to be the case) it is intended to be a solution to the aging faculty phenomenon so frequently referred to in *Issues and Alternatives*. Lakehead does not believe that the only or even major barrier to adaptability is an aging faculty'. (LU, p. 100)

York University supports the COU position of an adjustment fund partly designed to assist in the hiring of new faculty. They go on to suggest that the province could create a network of distinguished professors who would remain in their current location but have their salaries paid by the province. This would free up university funds which could then be used to hire new scholars.

Faculty-association submissions

Both the Carleton and Western faculty-association briefs stress the need for adaptability and underline the threat that overspecialization or system rationalization might pose to that adaptability. The Carleton submission points out:

> It has been our experience that Ontario Universities have been most adaptive and that over-specialization is the greatest threat to that adaptability. The development of Carleton offers two instructive examples of this. If, some fifteen years ago, Carleton had determined to become a highly specialized institution, one that was designed to serve local industry, it would have been an institution whose graduates were prepared to work in the public service. Its strong programs would have been in the social sciences, and engineering and science would have probably been peripheral. Had this happened, Carleton would not have been able to meet the needs of the growing high technology industry in the Ottawa-Carleton region. Instead, because it had strong programs in a variety of fields, it could adapt, shift resources, and expand to meet the changing needs of its community. In responding to the growth of high technology, Carleton did not have to abandon its very strong programs in social science. Because it was not a

> could adjust its resources to meet the changing needs of its community. (pp. 9-10)

A second adaptability issue concerns the age profile of Ontario faculty. Carleton's faculty-association submission is in favour of a long-term 'adjustment fund' to facilitate the voluntary retirement of faculty. Queen's faculty-association brief is less enthusiastic about the fund, though it does not oppose it in principle.

OCUFA is very concerned about the treatment of faculty. Faculty salaries are some 30 per cent lower in real terms than they were in 1971 (p.26). To it, the underfunding of the system has led to fewer tenure-track positions and made it more difficult to bring 'new blood' into the system. It supports policies to encourage voluntary early retirement. The CAUT brief also supports the idea of generous early-retirement provisions, and rejects discrimination between faculty on the basis of age.

The theme that there should be no age (or sex) discrimination amongst faculty figures prominently in the faculty-association submissions. Several of them also expressed the view that the new Charter of Rights might make current mandatory-retirement practices illegal.

Student submissions

The students suggest that adaptability is vital and claim that the best way to foster adaptability is to provide sufficient funds. On the subject of the adjustment fund the CFSO represents the views of all students-groups submissions:

> As a term of reference, the 'adjustment fund' fails to recognize the effects of underfunding. If funding were adequate, the need to encourage faculty renewal would not have appeared .... We would therefore suggest that appropriate measures to deal with faculty aging are found elsewhere than in a special one-time 'Adjustment Fund'. (CFSO, pp. 188-9)

The CFSO suggests that a better solution would be to apply any adjustment funds to the basic operating grants on a permanent basis.

The CFSO also believes the wholesale abolition of tenure is an extreme and unwise solution. However, the students of Wilfrid Laurier suggest that tenure is long overdue for re-evaluation since it now protects professors not from political interference but from economic realities. Those who believe in the maintenance of tenure say that standards of research effort and teaching ability should be formulated and enforced, and that professors should receive training in teaching.

Other submissions

The Ontario Chamber of Commerce 'strongly support[s] allowing market forces to create and shape student demand, particularly in view of the problems encountered in forecasting manpower needs' (OCC, p. 3). It is also in favour of an adjustment fund to assist universities in phased retirements, reduced-responsibility appointments, and faculty transfers. However, it stresses that early retirement and reduction of responsibilities should be voluntary. Further, it suggests eliminating programs that are offered by several universities in the same region.

The EEMAC provides the outline of a five-year plan to make the system less regulated and more market-influenced. A key element of the plan would force the boards of governors to take full responsibility for funding and allocating resources by clear public reporting of their decisions and the results of those decisions.

The Confederation of Ontario University Staff Associations (COUSA) requests that affirmative-action programs and an equal-opportunity officer be established at each university. It wants special emphasis to be placed on improving the position of women staff. It calls for: training, retraining, a study of both relative salaries and the numbers of female staff relative to male staff, free day care, and the control of sexual harassment.

The Association of Women Teaching at Queen's points out that women now constitute about 30 per cent of full-time enrolments in graduate studies at Queen's and represent about one-quarter of the doctorates awarded in Canada. However, women now hold the equivalent of only 13 per cent of the full-time faculty positions at Queen's. It therefore proposes that a substantial portion of the proposed adjustment fund be earmarked for programs for the recruitment, appointment, promotion, and tenure of women faculty in all disciplines, and particularly in those fields in which women are now unrepresented or grossly underrepresented.

TV Ontario states that more courses at the postsecondary level should be related to the changing workplace. They recommend a greater emphasis on interdisciplinary education and individualized, computer-based, student instruction. It says there is also a need for a major development of networking for the purpose of the broad distribution of information on an economic basis. Further, it suggests we should seriously consider the creation of a dedicated French service.

BALANCE AND DIFFERENTIATION

One of the major concerns of the Bovey Commission is the proper allocation of available resources amongst the wide variety of functions of the university. It says 'An appropriate balance is required for resource allocation among the five basic objectives' (OU, p. 16), these objectives being: undergraduate education, professional programs, graduate education, research and development, and service (OU, p. 8). Similarly, an appropriate balance among the various (and varied) institutions is seen as crucial when attempting to optimize the use of a limited amount of funds. The Commission thus requested its respondents to suggest other important aspects of balance not listed in OU. It asked for guidance in identifying possible areas of strength, either existing or potential, that could serve as bases to develop centres of specialization. If we are to move towards greater differentiation, it wondered, do we differentiate by institutional character, by sectoral areas, by programs, by some combination of the above, or do we further develop the current pattern of differentiation that has already evolved among the universities of Ontario? Further, do we wish to have institutional self-definition, collective self-definition (through the COU), or external definition? How do we implement the desired pattern of differentiation? Do we use legislative action, financial incentives, or allow the institutions autonomy to decide upon their own roles?

University submissions

The COU suggests:

> The present degree of differentiation among Ontario universities, particularly at the graduate level, is almost entirely the result of institutional initiatives. It is a clear sign of the health of the system. Further differentiation must not be at the expense of individual institutions' commitment to core

> disciplines, nor financed by the diversion of funds from them. While the best use of limited resources requires some concentration in centres of strength, institutional self-definition, together with financial incentives rather than legislative intervention, should be the primary process toward further role differentiation within the system. (COU, p. v)
>
> The Commission refers to the possibility of establishing special purpose institutions or centres of concentration (excellence). When such institutions or centres emerge in the normal course of a university's development or through cooperative arrangements among universities, and when they are adequately funded, they can provide a productive environment for research and graduate education. We would, however, oppose any attempt to create centres devoted entirely to research. Separation of research activity from teaching is not consistent with the role of the university. (COU, p.36)

The COU also makes two other suggestions. First, it believes that it is unrealistic to expect that greater differentiation will solve the problems which have arisen from underfunding. Second, it has always encouraged institutional self-definition, although it has also always encouraged members to consult broadly, in conjunction with the COU and other members, on the planning and development of programs.

The strongest deviation to the COU position arises in the University of Toronto brief, which says it

> favours the establishment of a university system that is deliberately planned and funded on the basis of institutional differentiation ... Planning, coordination and legitimization of institutional forms will be necessary. An external agency should determine and plan for the characteristics the system should have, but universities should then define the specific ways and means by which they would move to realize their characteristics. (U of T, p. 15)

Several universities, including Guelph, Waterloo, and Windsor, feel that institutional self-definition is the best means of achieving differentiation. Most see either financial incentives and/or institutional autonomy as the best method of implementing a system conducive to differentiation. Only Ryerson sees a role for legislative action in defining the system's balance and differentiation. It argues for legislative action, in combination with institutional autonomy and financial incentives, to achieve the optimal degree of balance and differentiation.

The University of Waterloo suggests the universities be asked

> to table their plans for the next five years and the next ten, and accept some plans, reject others, and negotiate a system in which every institution knows what its particular role is to be – and has had a large part in determining it. (UW, p. 18)

Faculty-association submissions

The OCUFA brief is very concerned about the special problems of the universities of northeastern Ontario. It recommends:

> That the Commission examine carefully all available documentation on the restructuring of universities in northeastern Ontario, and advise the government of Ontario to proceed with consideration of the draft act presented to them by the coordinating committee of the northeastern Ontario faculty associations. (p.45)

Student submissions

The students feel that increased specialization in a system that is already highly specialized will mean loss of programs and possible exclusion of part-time and Northern students. They say that rationalization would affect the number of tutorial offerings at the undergraduate level and hence graduates' main source of income. Further, they suggest that universities that decide to specialize in undergraduate teaching will weaken the dynamics of the interaction between research and teaching: that slowly they will be viewed as second-rate institutes and die. Ultimately, then, rationalization is seen as a policy that would not encourage broader access.

Northern students would prefer a unilingual francophone university. In addition, they want all existing Northern campuses to be maintained and to be open to full- and part-time students.

The CFSO says that it is unacceptable to build a specialized system based on unreliable manpower projections. Further, it argues that:

> the Commission's pursuit of specialized institutes of excellence must be tempered with the realization that a strong core is essential for the supplementary activities of universities. Without such fundamental and broadly-based areas of study at universities, there will be *no* potential for designated-purpose institutes to develop and flourish in the future ... Not only will universities be unable to adapt to the future, but their graduates will be unable to do so as well ... Universities must be seen as more than providers of technical training. The fruitful interaction of a broad spectrum of academic disciplines and professions at a single institution will produce university graduates that have a broader education than that obtained in a 'rationalized' form of vocational training. (CFSO, p. 38)

The CFSO also argues against separating funds into operating and research categories. It believes that such decisions are best left to the universities, which should retain their academic freedom to design their own courses, etc., albeit within certain constraints.

Other submissions

The Canadian Chemical Producers' Association (CCPA) suggests that there are too many options or subdegrees available within many disciplines. It says basic knowledge that enables a graduate to respond to new situations should be the goal of undergraduate programs. The CCPA is also in favour of joint university-business research conferences designed to facilitate technological co-operation. It argues for designated-purpose research institutes within a university setting to provide an entrepreneurial link with industry, with the caution that the primary role of universities is to educate and therefore act as training grounds in R&D for students.

The CMA points out that due to the uneven quality and quantity of our trained workers, decreased education revenues, and increased costs, there is a need for corporate-academic collaboration. The CMA also suggests that there should be not only financial support and contract research but also a system to share personnel, facilities, and joint training of workers. It adds that there should be corporate access to university and college resources. It says these links should be established by encouraging academics to spend their sabbatical year in the corporate sector and by placing corporate executives in teaching positions on campuses.

The Communist Party of Canada (Ontario) opposes the expansion of corporate-academic co-operation. It provides examples of possible harmful effects of this co-operation. Its brief also discusses the possible harmful effects of having R&D at our universities under the control of foreign multinational corporations.

A brief by the City of Windsor concentrates on the impact that a reduction in the activities of a university would have on a municipal government and the local community. Windsor expresses concern about the possible harmful effects of increased specialization and differentiation in Ontario's university system. The Windsor brief suggests that increased specialization might result in the closing of the faculty of law or the faculty of education at the University of Windsor. It says this would adversely affect the economic and social situation in Windsor.

The University of Waterloo Advisory Council calls for a two-tiered university system consisting of full-service universities, or those that provide both a broad undergraduate program and special centres of excellence, and several regional universities providing limited curricula with a focus on liberal arts and science.

FUNDING

The Bovey Commission's terms of reference stated that the universities and other respondents should reply on the premise that overall public funding will remain constant in real terms. Within this framework the Commission asked what alternative funding arrangements would be necessary to satisfy the concerns already raised in the discussions on adaptability and differentiation. The Commission made known its concerns about accountability and autonomy. It also wanted to know whether there should be a further separation between teaching and research. If so, who would cover the indirect costs of research?

With regard to tuition fees, the submittees were asked to consider who should set the level of tuition fees and what might be the effects of higher tuition fees. Other questions covered the relative roles of the federal and provincial governments in the realm of funding; the costs and benefits of new policies to increase private-sector funding; methods of allocating operating funds to the different institutions; funding and allocating capital expenditures; and increased entrepreneurial activity by the universities as a means of supplementing their revenues.

University submissions

On the issue of funding, the COU reports:

> To coordinate the roles of the federal and provincial governments in the funding of university teaching and research, Council proposes the creation of a Canadian Advisory Council for Higher Education and Research. In COU's view, the legitimate interests and responsibilities of both levels of government in research could be met if the core undertaking of universities were funded by both levels via the institutional infrastructure. Contract research, on the other hand, should be fully funded by the sponsors.
>
> As concerns tuition fees, a majority of Council members would favour a staged increase in fees to represent a greater share of institutional costs in providing a quality education, provided that student aid were similarly adjusted. Universities would have enhanced financial flexibility if they had discretion to set tuition fees over a wider range by programme and even by institution.
>
> Council rejects both student vouchers and non-formula, discretionary funding as means to allocate operating funds. It supports formula funding according to the currently recognized criteria, but has concerns about the adequacy of the present formula in the new environment, since the formula is judged unduly dependent on a single input measure: enrolment. In addition, it must be stressed that the present formula is simply an allocative mechanism. It does not determine the size of the block grant to the university system. A multi-dimensional formula might be explored, with consideration of such components as base funding related to core commitments to teaching and research, plus differential supplementary grants in support of particular institutional responsibilities such as bilingual, regional and distance activities. Similarly, a new approach must be taken to capital grants, after a decade of government suspension of the formula governing capital expenditure. Complementing these

> two initiatives should be a fresh approach to encouraging support from the private sector, although this could never be a panacea for current fundamental problems. (COU, pp. vi-vii)

More specifically, the COU suggests that any new capital-funding approach should:

> 1 formally recognize the overall level of capital funding needed to protect Ontario's major investment in university physical plant;
>
> 2 permit universities to plan their capital expenditures several years in advance;
>
> 3 take into account the variety of ages and conditions of buildings throughout the province; and
>
> 4 allow universities to plan and implement a programme of physical plant regeneration based on their own priorities. (COU, p. 55)

The COU also feels that private-sector support must not be seen as a solution to the fundamental financing problems of the universities. Its view is that 'greater private sector support is desirable for several reasons: it increases university income, diversifies the sources of support, and encourages appropriate responsiveness to the needs of the private sector' (COU, p.56). But it also suggests that there are often caveats to private-sector support. In many cases it is made available only for specific-project research and not general education. Thus, it sees a potential distortion of the universities' fundamental priorities if too heavy a reliance on private funding is developed.

From the universities' perspective, the central issue remains the adequacy of the financial base they can draw upon. Within the government-funding constraint set out by the Bovey Commission the discussion is limited to several principal issues centring on how to allocate government funds, on tuition fees, and private sources of funding.

In the main, the universities' position is adequately represented in the COU brief, with the following major exceptions. The University of Waterloo believes the most readily available source of funds is from increased tuition fees. It also suggests that increased 'tax incentives would help promote the donation of equipment' (UW, p.24). Finally, for capital purposes Waterloo proposes that the government match 'private sector support on a two-for-one basis ... [this] provides both the incentive and the basis for allocation' (UW, p. 27).

Ryerson suggests a restoration of separate capital and operating funds, with separate allocations for research and instruction.

Lakehead University says that the present fee structure favours the general programs and that high fees in the professional programs violate the guiding principle of accessibility. It would prefer to see a narrowing of interfaculty differentials. In addition, Lakehead does not support the COU proposal that individual institutions be allowed to set their own tuition fees. It suggests that different fees for different universities are incompatible with the concept of a province-wide system.

Brock University supports the differing-fees proposal, but also states its reluctance to support higher fees.

The University of Western Ontario sees the trend towards earmarking of funds as running counter to the universities' and the public's best interests. It proposes that capital and operating funding be combined and that institutions become accountable to a central agency for long-term capital expenditures.

Faculty-association submissions

The OCUFA submission describes at considerable length the scale of underfunding of the university system and the detrimental effects that underfunding is likely to have. It concludes by making the following recommendation:

> OCUFA recommends that the Commission advise the government of Ontario that the proportion of the provincial budget devoted to university investment must at a minimum return quickly to the 1968-69 figure when university operating grants represented 6.1 per cent of provincial expenditures. (p. iv)

This recommendation is strongly endorsed by Carleton University's faculty association. The need for more funding is also emphasized by the Queen's faculty-association submission which, like the OCUFA one, refused to accept the Bovey Commission's premise that the institutions should not count on any extra funding.

The CAUT submission also stresses the harmful effects of underfunding on university adaptability, and recommends more funding to cover the indirect costs of university research and to help universities maintain their capital stock.

Student submissions

The CFSO says that the present system of financing postsecondary institutes has served education badly (p. 198). It provides general criteria for future federal transfer payments to the provinces:

> 1 Transfers should be extended in the form of cash grants to all provinces, rather than in the form of cash and tax transfers.
> 2 Transfers should be conditional on their use for programs they are allocated for and the promotion and expansion of accessibility and high quality;
> 3 Transfers should be for post-secondary operating costs;
> 4 The amount of cash transferred to the provinces should not be determined according to the province's ability to spend provincial dollars on post-secondary education . . .
> 5 Equalization should be an integral part of the transfer arrangement; and
> 6 Basic agreed-upon conditions should be met before provinces qualify to receive federal post-secondary transfers. The program should operate in a similar manner to transfers under the Medical Care Act. (pp. 199-200)

The students stress that no funding formula can solve the problem of inadequate funds.

The CFSO also proposes that an amount equalling 8.5 per cent of the replacement value of equipment be spent annually to cover the economic depreciation of the equipment in place.

The students are against separation of funds for instructional and research activities. They also propose encouragement of alumni support. They are against higher or differentiated tuition fees. They want the government to continue regulating fees. They say that if fees were set by individual institutions then the system will become elitist.

In their opinion, the Ontario Student Assistance Program (OSAP) has failed to provide adequate financial support to students. They want to see less stringent requirements for eligibility, especially concerning the definition of independence, and a change in the requirement that students have to contribute money in the summer irrespective of whether or not they have a job.

They see increasing student loans as an unacceptable solution, claiming that poor students are not willing to accumulate that much debt and that this acts as a barrier to accessibility. They want to see more grants. They also want more postdoctoral fellowships with both teaching and research duties so that these students can remain in the system and eventually replace aging faculty.

Another proposal calls for more federal responsibility in the following areas: universal accessibility, interprovincial mobility, national manpower requirements, culture (including bilingualism), and international responsibilities.

Although the students say that some private participation is desirable, they object strongly to heavy reliance on it. They believe that financial reliance on the private sector will threaten the university's role in generating pure or abstract research. Two student organizations proposed specialized institutes within the university, and one of them suggested that 50 per cent of private donations to the institutes should be untied.

Other submissions

The EEMAC states that the present fraction of GDP spent on the total education system is appropriate but that the allocation of funds between primary, secondary, and postsecondary institutions needs to be adjusted. Due to the declining student population, the EEMAC suggests that $400 million per year should be transferred from primary and secondary to postsecondary education. In addition, it believes that institutions should be permitted to set their own fees and that the fees should cover up to 25 per cent of the institutions' operating costs. The EEMAC also suggests establishing a support program for students to ensure that the higher fees do not affect accessibility.

The CMA supports the creation of corporate associates and affiliates programs. Corporations should selectively join associate or affiliate programs which would enable the company to receive, in exchange for its annual fee, scientific consultations and access to faculty and ongoing research. The CMA sees corporate donations as an opportunity to build up contacts between corporate and academic personnel which would facilitate the recruitment of new employees and the interchange of information. The CMA also believes that direct corporate support of students is important and of benefit to the corporation and to society at large.

The CCPA wishes to implement policies to encourage graduate research, but with a time limit for each student. It suggests post-graduate scholarships be limited to 42 months. However, it adds that there should be sufficient funds for experimental work and that the remuneration for the 42 months should be close to that which the student could have obtained if he or she had been employed in industry.

The Ontario Chamber of Commerce would like to see stricter enforcement of student-grant and student-loan programs. It believes the universities would benefit from the establishment of fundraising departments. In addition, both EEMAC and the OCC suggest that tax incentives for corporate donations should be improved. The OCC is in favour of the creation of innovation centres linking business and education in R&D.

The OFL recommends a Student Loan Bank together with a repayment system for funding students contingent on the future income of the graduate. It also recommends much more than a reduction in tuition: it wants tuition fees to be completely eliminated. It sees no more reason to have user fees for university education than for primary or secondary education.

The CUPE brief proposes that spending on universities be increased by 27 per cent or $320 million. It also wants an additional $50 million per annum to be spent on capital expenditures and repairs. It believes benefits from spending on education are great and affect all segments of the economy either directly or indirectly. CUPE suggests funds come from reduced tax benefits for business and reduced consumption spending, especially on imported goods, if possible. It also recommends that tuition fees be reduced.

In commenting on the concept of an adjustment fund, COUSA says that this concept should be expanded to a development fund to be used for special projects within the system.

The Communist Party of Canada (Ontario) feels that the 'greatest handicap universities face presently is the cumulative effect of ten years of underfunding. Most of its perceived problems – the declining quality of education, obsolescent equipment, out-of-date methods – stem from the necessity to do more with less' (p. 25). It says that the funds for the needed increased spending on education can come through higher corporate taxes or reduced expenditures by Ontario Hydro.

The UWAC wants to revise the funding formulae to recognize that the costs of financing innovative approaches to education (such as co-operative education) are different. It also wishes to provide more freedom to universities to raise tuition fees. It feels that we should not penalize a university by reducing the government funds it receives if that university is able to expand its funding sources itself. It supports the elimination of nonrelevant courses and activities. It adds that the province should approach the federal government to change research funding so that it covers overheads.

INTER-INSTITUTIONAL PLANNING AND CO-ORDINATION

The Bovey Commission's final major term of reference required it

> to consider the need for mechanisms for regulation, co-ordination and the provision of advice to the Government, and in particular to clarify the role of the Ontario Council on University Affairs in the context of a new and differentiated university structure. As is also the case with funding arrangements, the Commission wishes to discuss measures which will enhance quality, promote flexibility over the longer range, achieve the best program balance possible, and take due account of the important correlative issues of accountability and institutional autonomy. (OU, p. 24)

Regarding inter-institutional planning and co-ordination, the Bovey Commission identified several possible alternatives. Universities could submit to:

1 direct management by the Ministry of Colleges and Universities;
2 a province-wide University of Ontario with a single Board of Regents and Senate allocating funds and responsibilities;
3 establishment of an intermediary buffer body, such as a modified OCUA or the COU; or
4 the establishment of a highly autonomous institutional system with or without a voucher system.

University submissions

The COU comments on these alternatives are as follows:

> The universities are agreed in rejecting options (1) direct Ministry management and (2) the University of Ontario. These options would not promote flexibility, and are unlikely to enhance quality. They would not allow a sufficient degree of institutional autonomy; neither would they provide for accountability, inasmuch as accountability requires delegation of authority rather than direct control. We do not believe that experience in other comparable jurisdictions provides convincing evidence that either of these approaches is likely to result in a more effective differentiated system'. (COU, p. 58)

In summary, the COU says:

> The COU brief reviews the advantages and disadvantages of the . . . options outlined by the Commission to meet future planning and coordinating requirements. Council concludes by supporting the concept of a governmentally appointed intermediate advisory agency, but one with a clarified and strengthened role. A key element in the execution of the proposed new mandate for a successor to the Ontario Council of University Affairs would be a continuing and iterative dialogue with the universities on such subjects as role within the system, institutional capacity, resources and future plans. Responsibility for initiating the planning process would rest with the universities; the advisory agency would employ financing incentives and disincentives to further the implementation of approved plans. (p. vii)

Lakehead University and Laurentian University advocate a Northern Ontario University Council that could address the need for programs of particular interest to Northern Ontario. The University of Waterloo advocates a '*laissez-faire*' approach under which institutions would compete in the marketplace for students armed with vouchers' (OU, p. 24, as referred to in UW, p.28).

The most radical departure from the COU and the present system is outlined in the brief submitted by the University of Toronto. Although it supports the concept of a strengthened OCUA, it also proposes a modified University of Ontario concept with the University of Toronto acting as a figurehead for it. The U of T brief supports a proposal for

> a restructured and more differentiated system that would comprise:
>
> 1 one comprehensive university 'capable of offering a very broad range of high quality programs at all degree levels';
>
> 2 not more than four 'full service universities offering a more restricted range of high-quality programs at all levels';
>
> 3 four or five special-purpose institutions;
>
> 4 institutions that would respond mainly to demands for accessibility to undergraduate arts and science programs, and perhaps the initial years of engineering and business programs.
>
> The size and composition of some of these categories may be debatable, but the status and qualifications of the University of Toronto are not. Toronto is a comprehensive university in every sense of the word. The University offers a broad range of programs, sets high standards for all of them, and offers most of its programs at all degree levels (U of T, p. 72).

Faculty-association submissions

The OCUFA brief is critical of the recent role that the OCUA has taken:

> Perhaps the time has come for OCUA either to be reduced to a small technical group rendering detailed analyses and plans for the implementation of government policy, and clearly defined as an adjunct to Ministry operations, or for OCUA to be placed, finally, in a legislated state of independence, with a truly representative nature, and with the resources and freedom to speak authoritatively on the broad questions of social policy implicit in university planning and operations. We believe that the contradictions inherent in its existence at the pleasure of the government, and in its current style and thrust of advice, are, no matter how well intentioned the individual members of the Council may be, insuperable barriers to its proper functions. (OCUFA, p.40)

They then ask: how should the relationship between government and the universities be co-ordinated? OCUFA recommends that the Bovey Commission advise that a co-ordination mechanism be chosen that:

> - respects institutional autonomy;
> - recognizes and respects the methods used by universities to demonstrate accountability;
> - is sensitive to the dangers to sacrificing autonomy in the name of accountability, especially with reference to the role of the university as independent social critic;
> - is in itself accountable to the public; and
> - could make the universities more accessible to the public. (p.40)

The University of Toronto's faculty-association brief recommends simply that the government heed the advice of its own advisory body (i.e., OCUA).

The other faculty-association submissions are quite vague on the issue of how the system is to be co-ordinated.

Student submissions

The submission by the CFSO briefly discusses each of the eight options presented by the Bovey Commission. The brief states that

> despite the appearance of choice, only Options 3 and 4 really need to be considered. In fact, a combination of the 'options' is being advocated by an increasing number of administrations. . . . We see a number of difficulties with such a proposal. We have seen no mention of an enhanced or strengthened role for students, faculty, or support staff in such a refurbished OCUA. (CFSO, p. 203-4).

As an alternative the CFSO resubmitted a plan originally given to the (Fisher) Committee on the Future Role of the Universities of Ontario. This plan, by no means fully developed, sets down the essential aspects of a planned, accessible, quality university system. It consists of three main points. The first is for a unitary planning authority to set definite targets with funding consequent to the targets. The second is that planning must be comprehensive, embracing all post-secondary sectors. The third point outlines the nature of an appropriate planning authority. It would be a public agency, called the Commission on Post-Secondary Education, reporting and accountable to the legislature. This commission would consist of a board composed of students, faculty, staff, and administrators, and would have its own technical staff to undertake research. The commission would be responsible for planning, implementing, and monitoring the system:

> Individual institutions would retain autonomy to make decisions conerning programming at the institutional level, but within the context of overall system needs. Institutions would assist in the development of a planned system through participation in the Commission and the submission of proposals, and would determine how best to adapt plans locally. (CFSO, p. 210)

Other submissions

The EEMAC would like to see the governing boards of academic institutions and the government of Ontario working together within an integrated strategic-planning approach. This would identify the goals to be reached and establish action plans to reach them.

CONCLUSIONS

University submissions

In the last section of its brief, the COU stresses that the maintenance of quality in the Ontario university system is impossible to realize in the present funding environment. It adds that few if any of the other jurisdictions where university funding has recently been reduced or systems rationalized have been the object of such severe financial constraints, over such a long time, as the universities of Ontario. It indicates that some jurisdictions have now reversed earlier policies and ordered massive inflows of new funds:

> The funding of Ontario universities is not excessive, as some have suggested – in blunt fact, it is inadequate. Improvement in institutional planning and programming, in inter-institutional cooperation and coordination, in system structures and methods of funding allocation can be made in the interest of enhanced efficiency and effectiveness, but none will improve quality if financial support remains at its current

> level. Can the Province of Ontario afford to spend more money on its universities? The pressing question is: can it afford not to?, so essential are these institutions to the future well-being of the Province'. (COU, p. viii)

This stance is taken by all Ontario universities, and is supported by the faculty associations and the students.

Other submissions

The CUPE is not only opposed to any decrease in spending, it calls for an increase or improvement in all of the services provided by universities. This would require increases in faculty, staff, capital expenditures, and student aid.

APPENDIX: LIST OF BRIEFS SUBMITTED TO THE COMMISSION ON THE FUTURE DEVELOPMENT OF THE UNIVERSITIES OF ONTARIO (BOVEY COMMISSION)

UNIVERSITIES AND COLLEGES

Brock University (BU)
Carleton University
Collège Dominicain
Guelph, University of
Lakehead University (LU)
Laurentian University
Laurentian University – Algoma College Board of Trustees
Laurentian University – Collège Universitaire de Hearst
Laurentian University – Huntington University
Laurentian University – Nipissing University College
McMaster University
Ontario College of Art
Ontario Institute for Studies in Education
Ottawa, University of
Ottawa, University of – St. Paul University
Queen's University
Ryerson Polytechnical Institute
Toronto, University of (U of T)
Toronto, University of, Woodsworth College
Trent University

Waterloo, University of (UW)
Waterloo, University of, St. Jerome's College
Western Ontario, University of (UWO)
Wilfrid Laurier University
Windsor, University of
York University

UNIVERSITY GROUPS

Assoc. Depts. d'Etudes Francaises des Universites
CFS-Ontario, Ontario College Commission
Canadian Assoc. of University Schools of Nursing
Canadian Association of University Teachers (CAUT)
Canadian Federation of Students – Ontario (CFSO)
Canadian Federation of University Women
Canadian Organization of Part-Time University Students (COPUS)
Churches' Council on Theological Education in Canada
Committee of Ontario Deans of Engineering (CODE)
Committee of Ontario University Music Administrators
Confederation of Ontario University Staff Associations (COUSA)
Council of Ontario Universities (COU)
Media Directors' Group of Ontario Universities
Ontario Confederation of University Faculty Associations (OCUFA)
Ontario Association for Continuing Education (OACE)
Ontario Chairmen of Departments of Philosophy
Ontario Council for University Continuing Education
Ontario Graduate Association
Ontario Public Interest Research Group
Registered Nurses Association of Ontario

TEACHER GROUPS

Lakehead OTF – Teacher Education Committee
Ontario Assoc. of Education Admin. Officials
Ontario English Catholic Teachers' Association
Ontario School Counsellors' Association
Ontario Secondary School Teachers' Federation (OSSTF)
Ontario Teachers Federation (OTF)

UNIVERSITY INTERNAL GROUPS

Carleton University Academic Staff Associations

Carleton University Alumni Association
Carleton University Students' Assocation
Guelph, University of, Central Student Association
Guelph, University of, Graduate Student Association
Guelph, University of, Student Fed. of the College of Arts
Laurentian University – Northern Students Comm.
Laurentian University Alumni Association (LUAA)
Laurentian University, Students' General Association
Laurentian University, Presidential Advisory Committee on the Status of Women
McMaster Students Union
OISE, Graduate Students Association
Ontario College of Art, Students' Administrative Council
Ottawa, University of, Department of Philosophy
Ottawa, University of, Feder. des etudiants
Queen's University, Alma Mater Society
Queen's University Faculty Association
Queen's University, Assoc. of Women Teaching at Queen's
Queen's University, Department of Mining Engineering
Queen's University, School of Business
Ryerson Polytechnical Institute, Students' Union
Ryerson Polytechnical Institute, Cont. Educ. Students' Assoc.
Toronto, University of, Assoc. of P/T Undergrad. Students
Toronto, University of, Faculty Association
Toronto, University of, Engineering Society
Toronto, University of, Staff Association
Toronto, University of, Students' Admin. Council
Trent University Alumni Association
Trent University Department of Philosophy
Trent University Faculty Association
Trent University Student Union
Waterloo, University of, Advisory Council (UWAC)
Waterloo, University of, Federation of Students
Waterloo, University of, Graduate Student Association
Western Ontario, University of, Staff Association
Western Ontario, University of, Alumni Association
Western Ontario, University of, Prof. and Managerial Assoc.
Western Ontario, University of, Society of Graduate Students
Western Ontario, University of, University Students' Council

Western Ontario, University of, Western's Caucus on Women's Issues
Wilfrid Laurier University Students Union (WLUSU)
Windsor, University of, Faculty of Law
Windsor, University of, Graduate Student Society
Windsor, University of, Iona College
Windsor, University of, Organization of Part-Time Students
Windsor, University of, Students' Administrative Council
York University Alumni Association
York University Faculty Association
York University Students

BUSINESS/OTHER GOVERNMENT

Board of Trade, Metropolitan Toronto
Canadian Manufacturers' Association (CMA)
(The) Canadian Chemical Producers' Association (CCPA)
Canadian Standards Association
City of Kanata
City of Ottawa
City of Windsor
Commercial and Industrial Dev. Corp. of Ottawa-Carleton
County of Peterborough
Corporation of the City of Peterborough
Council for Franco-Ontarian Education
Electrical and Electronic Manufacturers Association of Canada (EEMAC)
IDEA Corporation
Imperial Oil
Infonorth Computing Inc.
Morwijk Enterprises
Ontario Chamber of Commerce (OCC)
Peterborough County Board of Education
Reed Stenhouse Limited
Thunder Bay Chamber of Commerce
Westclox Canada/Talley Industries

LABOUR GROUPS

CUPE-Local 2323, Carleton University Student Assistants
Canadian Union of Educational Workers

Canadian Union of Public Employees - Ontario Division (CUPE)
Labour Council of Metropolitan Toronto (LCMT)
Ontario Federation of Labour (OFL)
Ottawa and District Labour Council

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Canadian Memorial Chiropractic College
Canadian Parents for French (Ontario)
Canadian School of Management
COFTM/Centre Francophone (Conseil des Organismes Francophones du Toronto Metropolitan)
Communist Party of Canada-Ontario
Direction Jeunesse

Institute for Mystical and Spiritual Science
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